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INFANTRY TRAINING

VOLUME III

Skill at Arms

(Section and Platoon Weapons)

Pamphlet No. 17 Part I



GENERAL PURPOSE MACHINE GUN

Sustained Fire Role

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1976

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INFANTRY TRAINING

Volume III Skill at Arms (Section and Platoon Weapons)

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Pamphlet No. 17 Part 1 The General Purpose Machine Gun (Sustained Fire Role) 1976

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MINISTRY OF DEFENCE
JANUARY 1976

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THE CHIEF OF THE GENERAL STAFF

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INFANTRY TRAINING

Volume III

Skill at Arms

(Section and Platoon Weapons)

Pamphlet No. 17 Part I

The General Purpose Machine Gun

(Sustained Fire Role)

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Queen's Printer, Ottawa

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FOREWORD

1. Any unit wishing to propose amendments to this pamphlet is invited to write to the Chief Instructor of Small Arms Wing, School of Infantry, Warminster, Wiltshire. Any such proposals will be given consideration and, if there is a requirement for them, the appropriate amendments will be prepared by the School of Infantry for submission to Headquarters, Direction of Infantry.
2. This pamphlet supersedes Infantry Training, Volume I. Infantry Platoon Weapons, Pamphlet No. 6B, The General Purpose Machine Gun (Sustained Fire Role) (All Arms). 1968. Army Code No. 70485.

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TECHNICAL DETAILS

Machine Gun 7·62 mm L7A1 (GPMG)

And

Mounting Tripod 7·62 mm M.G. L4A1

Calibre 7·62 mm

Weights:

Gun 10·74 kg (23 lb 10½ oz)

Tripod 13·72 kg (30 lb 4 oz)

200 round belt of ammunition 5·44 kg (12 lb)

Cyclic rate of fire adjustable 600 to 1000 rpm

Sight range 200 to 1800 metres

Tracer burn out range 1100 metres

Rates of fire:

Normal 100 rounds per minute

Rapid 200 rounds per minute

Ammunition:

First line 5000 rounds per gun

Training 68000 rounds per Battalion per year

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ASSOCIATED PUBLICATIONS, FILMS AND FILMSTRIPS

Publications:

TITLE

Army Code No.

71026	Infantry Training, Volume II, Skill at Arms (Personal Weapons), Pamphlet No. 8, Part I, General Purpose Machine Gun, Light Role, (All Arms).
13633	User Handbook for Machine Guns, 7·62 mm, L7A1 and L7A2 (GPMG) and Mounting Tripod, 7·62 mm, MG. L4A1. 1962.

Films:

Catalogue No.

C 1215	The General Purpose Machine Gun.
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Filmstrips:

Catalogue No.

D 863	Theory of Small Arms Fire.
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ABBREVIATIONS

BZ	Beaten zone
CES	Complete equipment schedule
CZP	Correct zero position
DF	...	...	Defensive fire
ETR	...	...	Electric target range
FCO	...	...	Fire control order
FEBA	...	...	Forward edge of the battle area
FPF	Final protective fire
MPI	Mean point of impact
rpm	Rounds per minute

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ABBREVIATIONS

Beam size	BS
Control equipment, weapons	CES
Control and position	CIP
Defense line	DL
Electric target range	ETR
Fire control center	FCC
Forward edge of the battle area	FESA
First protective line	FPL
Mean point of impact	MPI
Seconds per minute	SPM

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INFANTRY TRAINING

VOLUME III

SKILL AT ARMS (SECTION AND PLATOON WEAPONS)

PAMPHLET NO. 17 PART 1

**THE GENERAL PURPOSE MACHINE GUN
(SUSTAINED FIRE ROLE)**

INTRODUCTION

Aim of the Pamphlet

1. The aim of this pamphlet is to teach the skills and techniques required by gun teams and gun controllers in the tactical handling of the General Purpose Machine Gun—Sustained Fire Role.

Layout of the Pamphlet

2. The pamphlet, written in lesson form, is divided into chapters as follows:
 - a. Chapter 1 contains the basic skills and information which the members of the gun team need to know.
 - b. Chapter 2 consists of practice periods which are designed to further develop the skills and techniques learnt.
 - c. Chapter 3 contains instructions regarding live firing and practice designed to ultimately produce a gun team capable of firing efficiently against an enemy in all circumstances.
 - d. Chapter 4 contains information for the instructor to help him understand the subject more fully. Also in this chapter are details of the training tests which are used to determine the gun team's handling standards.
3. Each lesson is divided into two parts:
 - a. *Part A—Instructor's Notes.* This contains the information required by the instructor to enable him to prepare for the lesson.
 - b. *Part B—Conduct of the Lesson.* This contains the matter to be taught and is laid out in a proven sequence.
4. Details printed in *italics* are instructions to the instructor.

Organization of Instruction

5. Instructors are allowed latitude in the method they adopt to teach the various lessons provided they do not deviate from the facts and drill laid down. The general purpose machine gun in the sustained fire role makes a very interesting subject to teach and assimilate.

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6. Practice periods can be repeated according to progress made. However, constant basic instruction and practice without firing is boring to the soldier.

Safety Precautions

7. Before every lesson all guns, drill cartridges and equipments must be inspected to ensure that there are no live rounds present.

Trilux Safety

8. It is necessary to take certain precautions in the event of breakages of Trilux articles, and the user must be made aware of the following:

- a. Trilux items contain radio-active material.
- b. No radiation is emitted, provided that the container remains unbroken.
- c. In the event of breakage, the following precautions should be taken:
 - (1) The escaping gas should not be inhaled.
 - (2) The broken parts should not be handled with bare hands.
 - (3) If breakage occurs indoors, doors and windows should be opened for five minutes to allow gas to clear. There is little danger if breakage occurs out of doors.
 - (4) Any breakage must be reported immediately.
- d. The dial sight and the aiming lamp contain Trilux items.

9 to 11. *Reserved.*

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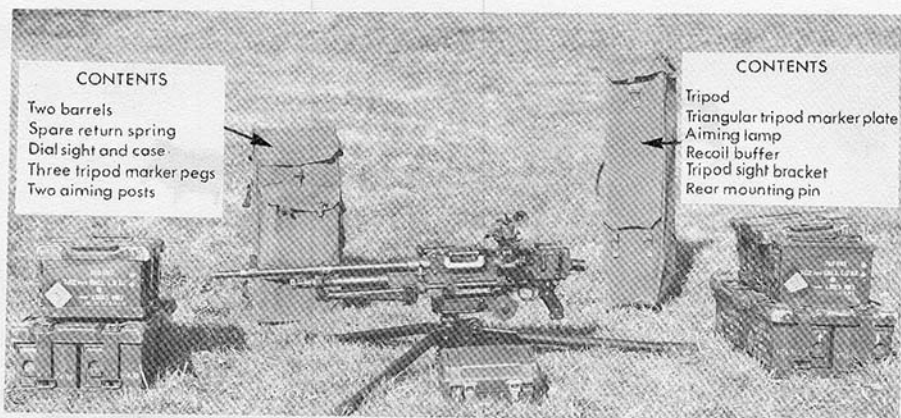


Fig 1.—The sustained fire role kit

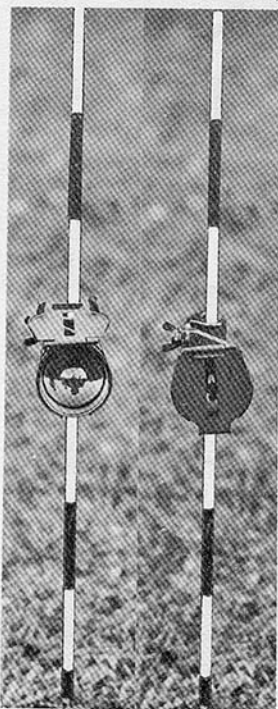


Fig 2.—Aiming post and lamp

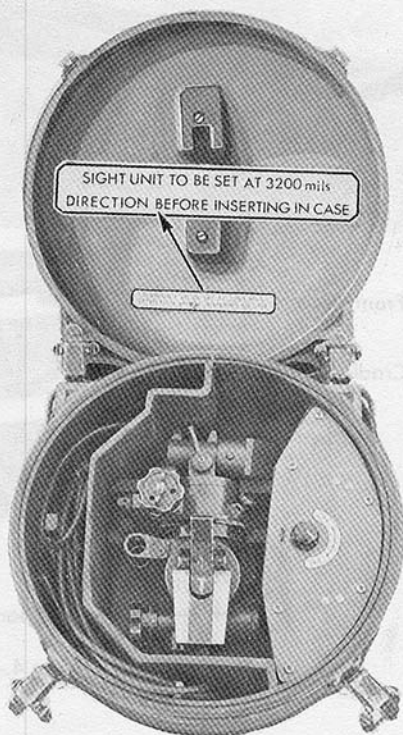


Fig 3.—Dial sight packing (old pattern case)

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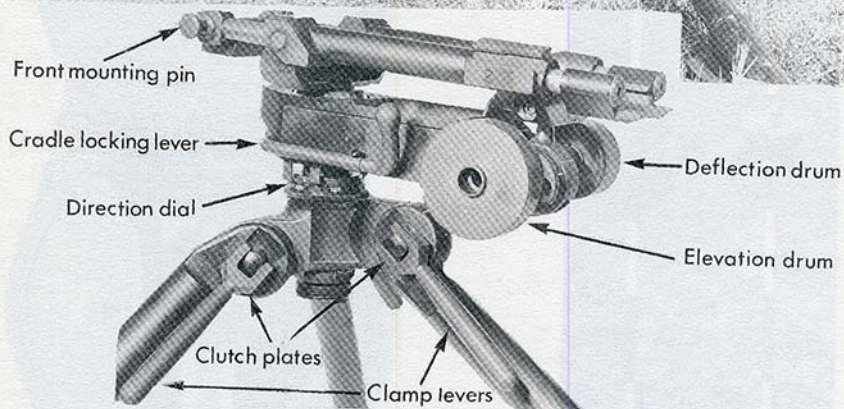
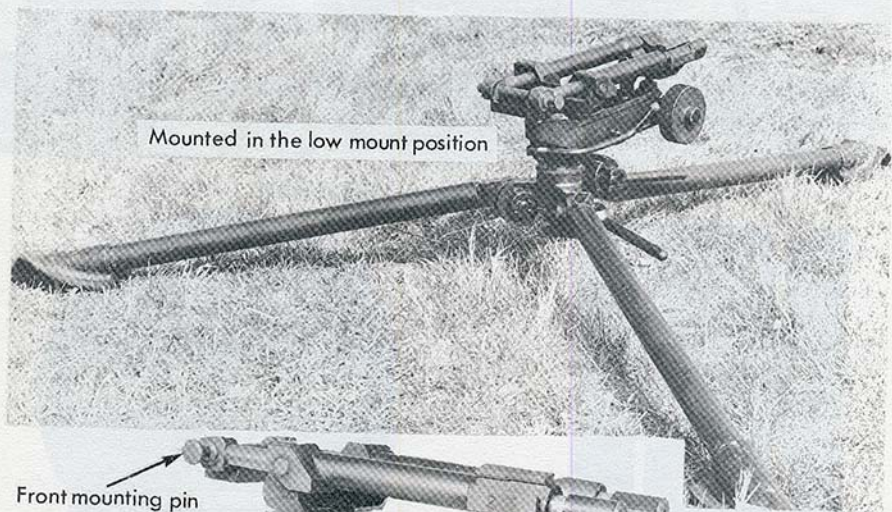
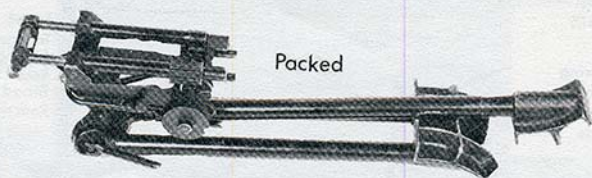


Fig 4.—The tripod

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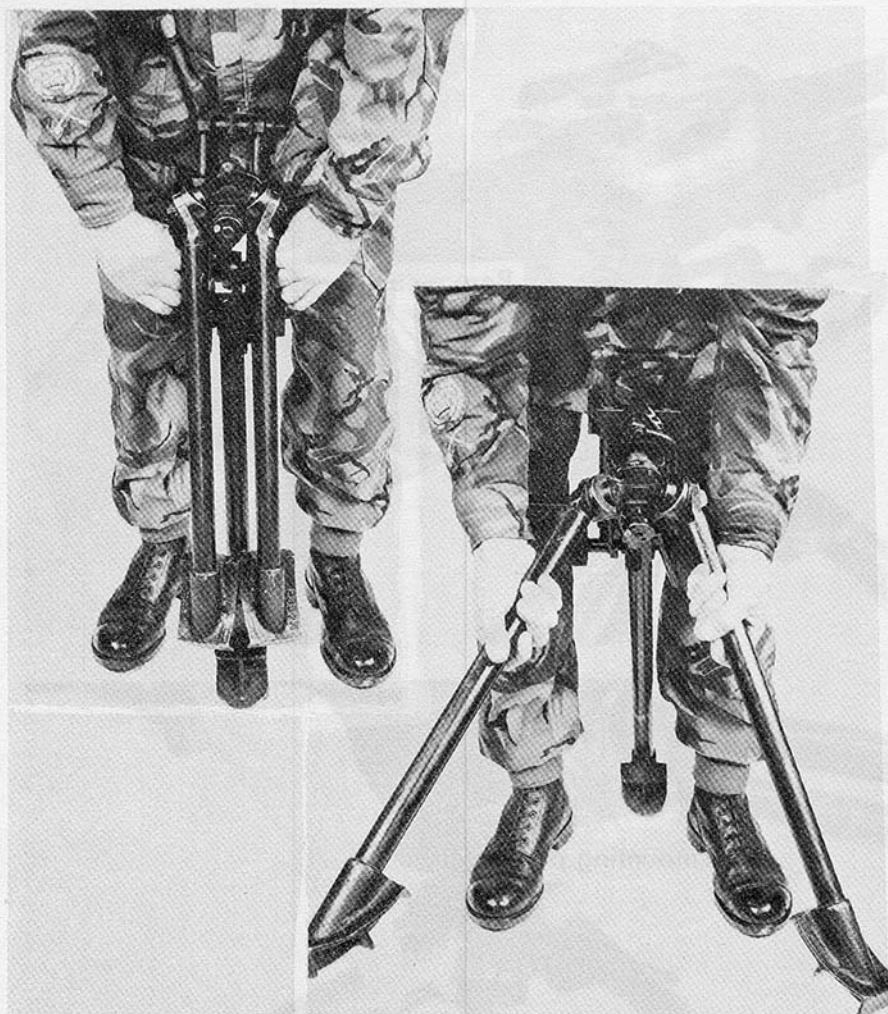


Fig 5.—Mounting the tripod

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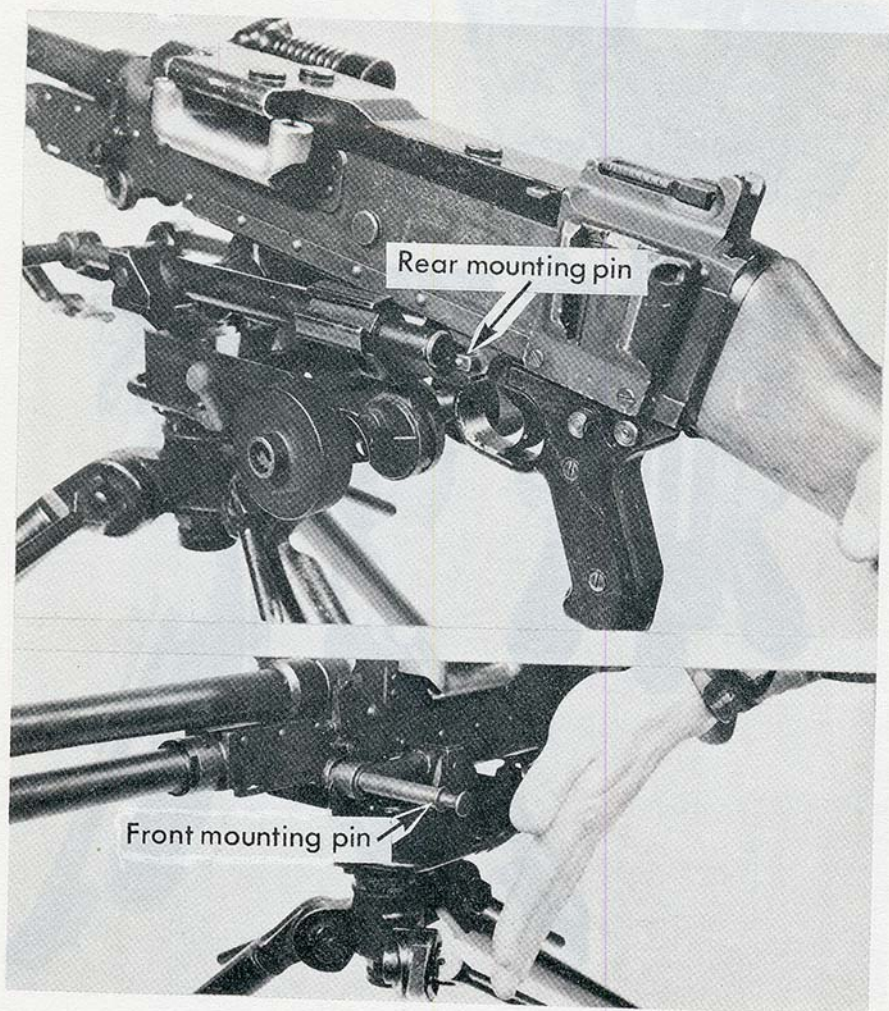


Fig 6.—Mounting the gun

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Fig 7.—Gun equipment in position

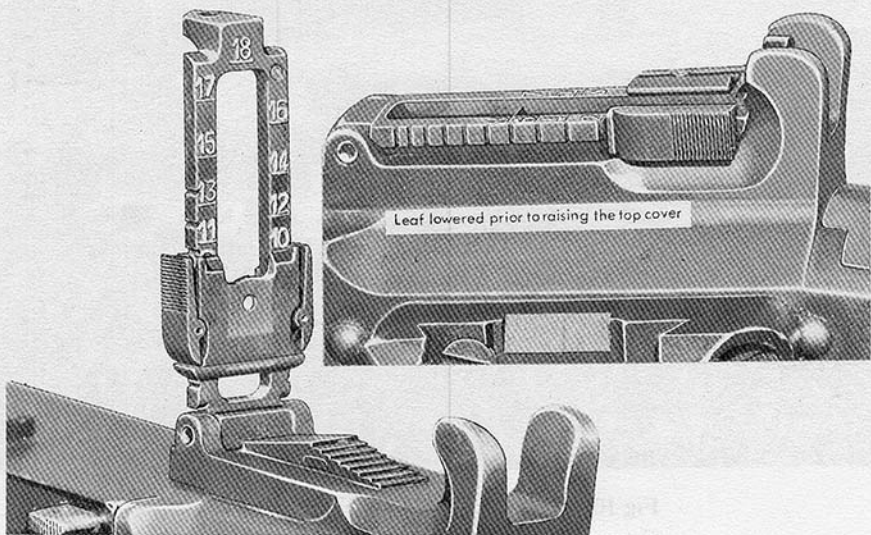


Fig 8.—Backsight
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Fig 9.—Gunner and gun controller in position



Fig 10.—Moving the equipment into cover

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CHAPTER 1

THE BASIC SKILLS

LESSON 1.—INTRODUCTION, THE TRIPOD MOUNTING AND DISMOUNTING.

LOADING, LAYING AND THE USE OF COVER

A. INSTRUCTOR'S NOTES

12. *Aim. To teach:*

- a. *The contents of the Sustained Fire (SF) Kit.*
- b. *How to mount and dismount the gun and the tripod, and the safety precautions involved.*
- c. *Loading and laying the gun on to the target.*
- d. *The use of cover.*

13. *Timings. Three 40 minute periods.*

14. *Method. A basic instructional outdoor period.*

15. *Stores:*

<i>General Purpose Machine Gun (GPMG)</i>	<i>1 per two soldiers</i>
<i>Sustained Fire (SF) kit (complete to CES)</i>	<i>1 per gun</i>
<i>Ammunition boxes</i>	<i>1 per gun</i>
<i>Drill rounds (belted)</i>	<i>20 per gun (minimum)</i>
<i>Target information sheet</i>	<i>1 per gun</i>
<i>Range table</i>	<i>1 per gun</i>
<i>Sandbags (half filled)</i>	<i>3 per gun</i>

16. *Preparation:*

- a. *Reconnoitre the training area to be used and select:*
 - (1) *A flat area for the initial instruction.*
 - (2) *An area for mounting the gun and tripod behind cover.*
- b. *Lay out the gun kits.*
- c. *Carry out the following actions on the kits selected for demonstrations.*
 - (1) *Check that the front mounting pin moves freely on the tripod.*
 - (2) *Check that the elevation lock lever functions.*
 - (3) *Centralize the elevating gear on the traversing bar.*

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17. *Miscellaneous:*

- a. *Instructors should teach only those aspects of the tripod which have not been previously taught in the light role.*
- b. *The ideal squad situation is to have two soldiers per gun and instructors will have to adopt their method of practice if this number is increased.*
- c. *Number the squad in groups of two and allocate one group per gun prior to normal safety precautions.*
- d. *Do not introduce practice as a team before paragraph 23.*
- e. *During practice, commands to use are:*
 - "Mount tripod" . . . "dismount tripod"*
 - "Mount gun" . . . "dismount gun"*
 - "Mount gun and tripod" . . . "dismount gun and tripod"*
- f. *During practice of laying the gun, use only the direct method of indication.*
- g. *Old pattern dial sights are to be set at 3200 mils by the instructor before putting them into their boxes.*

B. CONDUCT OF THE LESSON

Preliminaries

18. *Safety Precautions. Normal. (See paragraph 17. c.). Inspect all guns, belts, ammunition boxes and pouches. Indicate arcs of fire and reference points.*

19. *Revision. Nil.*

Introduction

20. *Explain.* Rifle company headquarters include a defence section containing GPMG Sustained Fire (SF) detachments. Their task is to provide protective fire in defence and supporting fire in attack both by day and by night. To be effective in their roles, it is essential that the soldiers in each team fully understand the complete kit involved and can prepare it for the occupation of a fire position.

Sustained Fire Kit (See Fig 1.)

21. *Explain.* Each gun team has:

- a. One holdall containing:

- The Tripod
- Tripod sight bracket
- Triangular tripod marker plate
- Rear mounting pin
- Aiming lamp
- Recoil buffer
- Target information sheets
- Range tables

} Not issued as part of the CES

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b. One holdall containing:

- Dial sight and case (identical to that used with the 81mm Mortar)
- Two barrels
- Return spring
- Two aiming posts
- Three tripod marker pegs

22. Confirm by questions.

23. Aiming Lamp. Explain. The aiming lamp is made of bakelite with a glass lens at the front. It contains a Trilux element, the light from which is concentrated by the lens. Because it cannot be switched off, and its light is visible for at least 200 metres, care must be exercised in handling and siting it, so that the security of the position is not prejudiced.

No stripping of the aiming lamp is permitted. The lens of the aiming lamp, when in use, is covered by a steel cover, clipped on to the front of the lamp. The cover is hinged, and in it is cut a slot, which must be in the vertical position when the lamp is to be used. The lamp is fitted into the bracket of a clamp which has a 'thumbscrew' device for securing the bracket to the aiming post, and which is hinged to allow the position of the bracket and lamp to be adjusted when they are fitted to the aiming post (see Fig 2).

24. Confirm by questions and practice.

25. Dial Sight and Ammunition. Explain:

- a. The dial sight provides an auxiliary method of aiming at a target and will be taught in the later lesson. It fits into its box with its bracket uppermost (see Fig 3).
- b. Ammunition to be used in the sustained fire role is packed in 200 round belt boxes.

26. Confirm by questions.

27. The Tripod (see Fig 4). Explain and demonstrate:

- a. The tripod legs are held in position by clutch plates and secured by clamp levers. On the bracket at the pivot point of the legs is a direction dial, the markings of which are not used and should be ignored.
- b. A cradle is fitted to the bracket by a ball and socket joint. This is secured by the cradle locking lever which, when unlocked, allows for a 6400 mil traverse of the cradle. The cradle is buffered to absorb the recoil of the gun during firing. The gun is secured to the forward end of the cradle by a mounting pin. A rear mounting pin, when fitted into the gun, engages in a slot in the rear mounting seating of the cradle.

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- c. A deflection drum, fitted to the right rear of the cradle, is used to obtain adjustment in direction. When the drum is pulled outwards, a clicking device is brought into operation; each click is equal to two mils. When the drum is pushed inwards, the clicking device is taken out of operation.
- d. Adjustments for elevation are obtained by rotating the elevation drum on the left rear of the cradle. The lock lever must first be released and then locked after adjustments are completed.
- e. On the left bar of the cradle is a dove-tailed slot to take the tripod sight bracket.
- f. Mounting lines on the tripod bracket and clutch plates enable the tripod to be set in either a high mount or a low mount position.

28. *Confirm by questions.*

Mounting and Dismounting the Tripod on Even Ground.

29. *Explain and demonstrate.* The gun team consists of a gunner and a gun controller. Each has individual responsibilities. The gun controller is responsible for mounting and dismounting the tripod.

a. To Mount the Tripod: (see Fig 5)

- (1) Withdraw the tripod from the holdall. With the tripod legs to the rear straddle the tripod. Grasp the front bar of the cradle and lift the tripod so that the legs are vertical. Grip the cradle between the thighs and unlock both clamp levers. Lower the tripod to the ground. At the same time, swing both legs forward, until they are in a low mount position, as indicated by the mounting line, and lock the levers. Ensure that the rear or long leg is also in the low mount position.
- (2) Release the cradle locking lever and lift the rear of the cradle upwards until horizontal. Secure the locking lever and pull out the front mounting pin. If necessary, rotate the deflection drum until the elevating gear is central on the traversing bar and rotate the elevation drum until the small stud is in the centre of its slot. At all times the dial on the head of the tripod is to be level. The long leg of the tripod is to be to the rear.
- (3) Fit the tripod sight bracket by unscrewing the wing nut and sliding the bracket on from the rear. Ensure that it is fully forward and tighten the wing nut.
- (4) Position, on the left hand side of the tripod:
 - (a) The ammunition box with the quick release catch of the lid towards the tripod.
 - (b) The dial sight box.
- (5) Erect an aiming post, ensuring that it is vertical, and a lamp not less than 10 metres from the gun and near to the gun's left, or right, of arc.

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b. *To Dismount the Tripod.*

- (1) Remove the tripod sight bracket by unscrewing the wing nut and slide. Push in the front mounting pin. Ensure that the long leg is in the low mount position and the elevating gear is central on the traversing bar. Release the cradle locking lever. Depress the rear of the cradle on to the long leg of the tripod and lock the cradle.
- (2) Straddle the tripod and grasp the front mounting pin of the cradle. Unlock the front leg clamp levers. Raise the tripod to the vertical position, allowing the legs to drop. Grip the cradle between the knees. Ensure that both front legs are in line with the long leg and clamp firmly. If the tripod is not required for further use, return it to its holdall.
- (3) Recover and replace the aiming post and lamp in the holdalls.
- (4) Place the ammunition box and dial sight box alongside the other kit.

30. *Confirm by practice. Leave the tripods mounted after the last practice.*

Mounting and Dismounting the Gun

31. *Explain and demonstrate.* The gunner mounts and dismounts the gun.

a. *To Mount the Gun.*

- (1) Check that the gun is loaded and that the gas regulator is correctly set. Remove the butt and fit a recoil buffer, ensuring that the catch is properly engaged. Close the ejection opening cover. Fit the rear mounting pin. Lift the gun and, ensuring that the flat surfaces on the rear mounting pin are rightly positioned on the cradle slot projection, push the gun fully forward and insert the front mounting pin (see Fig 6). Fold and lock the bipod legs.
- (2) Remove the dial sight from its box and fit it to the tripod by inserting the sight bracket into the tripod bracket. Press down on the sight catch and push the sight fully home.
- (3) When the gun is mounted check that the direction dial is level and stamp in the tripod shoes, placing sandbags or pieces of turf on the legs to ensure stability. Finally again check that the direction dial is level.
- (4) Position the holdall containing the two barrels to the left of the tripod (see Fig 7).

b. *To Dismount the Gun.*

- (1) Ensure that the gun is unloaded.
- (2) Remove the dial sight by pressing down on the sight catch and lifting up the sight. Replace it in its box.
- (3) Release the bipod legs, pull out the front mounting pin and draw the gun off the tripod to the rear.
- (4) Replace the butt and remove the rear mounting pin. Return the recoil buffer and the rear mounting pin to the holdalls.
- (5) Place the holdall alongside the other kit.

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c. *Safety During Mounting and Dismounting the Gun and Tripod.* Explain. When carrying out the actions of dismounting the gun and tripod as a team, it is important that the gun controller does not go forward of the gun position until the gun has been unloaded by the gunner. During training the gun is always to be unloaded before it is removed from the tripod.

32. *Confirm by practice. Leave guns mounted after last practice.*

Loading, Sightsetting and Unloading.

33. *Explain and demonstrate where necessary:*

a. For ranges between 800 and 1800 metres, the backsight is raised to the vertical position (see Fig 8). Graduations are of 100 metres up to 1800 metres; however the sight can be set accurately to the nearest 50 metres.

b. The gunner is to adopt a position to the left rear of the gun, left hand on the pistol grip, right hand on the deflection drum. The gun controller should position himself on the left of the gunner where he can best perform such duties as loading, etc., (see Fig 9). At all times the team are to adopt positions which offer a minimum of exposure.

c. Loading and sight setting for ranges up to 800 metres is as taught for the GPMG in its light role.

d. On the range being ordered, the gunner is to set the sight, cock the gun and put the safety catch to 'S'.

e. When the backsight is being used in the vertical position it is necessary to lower the leaf during any action which requires the top cover to be raised.

f. On the command "Unload—clear gun", lower the sight, if necessary move the safety catch to 'F' and carry out the actions as taught in the light role. The gun controller is to replace the belt in the box and secure the lid.

34. *Confirm by practice. Leave guns mounted and loaded after the last practice.*

Laying the Gun

35. *Explain and demonstrate:*

a. On a range being ordered, act as previously taught.

b. On a target being indicated and the order "Lay" given, the gunner calls "Unlock". The gun controller unlocks the cradle locking lever and the gunner roughly aligns the sights on to the target and then calls out "Lock". The gun controller locks the locking lever.

c. The gunner releases the elevation drum lock lever and rotates the elevation drum until the sights are in line for elevation then tightens the lock lever. He then pushes in the deflection drum and turns it until the sights are in line for

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direction. A final adjustment for elevation is made if necessary. When he is satisfied that the aim is correct, the gunner is to pull out the deflection drum and report "On".

36. *Confirm by practice. After the last practice order "Dismount gun and Tripod".*

Fire Position and Use of Cover

37. *Explain and demonstrate where necessary:*

a. When mounting the gun and tripod behind cover, the selected position should be reconnoitred by the gun team and the following points taken into consideration:

- (1) The tripod long leg should be to the rear except when the tripod is mounted on a forward slope or the side of a bank, when it should be pointed down the slope. It should be to the front when using the fire trench.
- (2) To keep exposure to a minimum, the gun should be mounted, when necessary, away from the cover selected and the complete assembled equipment moved forward to the cover by the team (see Fig 10).
- (3) The tripod should be mounted initially in the high or low mount position depending on the height of the cover available and the minor adjustments made, when in the final position.

b. When in the position:

- (1) Ensure that the tripod is level.
- (2) Make certain that the gun is mounted as low as possible consistent with obtaining good observation of the target area.
- (3) Check that the fire will clear the crest of the cover by lowering the head until the eye can follow the line of the feed tray.
- (4) Position the aiming lamp and post so that the lamp is clearly visible from the fire position and protected from enemy view.
- (5) Check that there is sufficient ejection clearance.

38. *Confirm by practice. Leave guns mounted after the last practice.*

Conclusion

39. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Confirm by questions and practice as time permits.*
- c. *Normal safety precautions.*
- d. *Order "Dismount gun and tripod". Pack kit.*
- e. *Summary. To include the following:*
 - (1) The importance of safety rules during mounting and dismounting.
 - (2) The importance of frequent checks of the full equipment.
 - (3) A forecast of the squad's next lesson in this subject.

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direction. A final adjustment for elevation is made if necessary. When he is satisfied that the aim is correct, the gunner is to pull out the deflection drum and report "On".

36. Confirm by practice. After the first practice order "Dismount gun and Tripod".

Fire Position and Use of Cover

37. Explain and demonstrate where necessary.

a. When mounting the gun and tripod behind cover, the selected position should be recommended by the gun team and the following points taken into consideration:

- (1) The tripod long leg should be to the rear except when the tripod is mounted on a forward slope or the side of a bank, when it should be pointed down the slope. It should be to the front when using the fire trench.
- (2) To keep exposure to a minimum, the gun should be mounted, when necessary, away from the cover selected and the complete assembled equipment moved forward to the cover by the team (see Fig 10).
- (3) The tripod should be mounted initially in the high or low mount position depending on the height of the cover available and the minor adjustments made when in the final position.

b. When in the position:

- (1) Ensure that the tripod is level.
- (2) Make certain that the gun is mounted as low as possible consistent with obtaining good observation of the target area.
- (3) Check that the fire will clear the crest of the cover by lowering the head until the eye can follow the line of the lead tray.
- (4) Position the aiming lamp and post so that the lamp is clearly visible from the fire position and protected from enemy view.
- (5) Check that there is sufficient deflection clearance.

38. Confirm by practice. Lead gun mounted after the last practice.

Conclusion

39. End of Lesson Drill.

- a. Questions from the squad on the course lesson.
- b. Confirm by questions and practice as time permits.
- c. Normal safety precautions.
- d. Order "Dismount gun and tripod". Pack kit.
- e. Summary. To include the following:
 - (1) The importance of safety rules during mounting and dismounting.
 - (2) The importance of frequent checks of the full equipment.
 - (3) A forecast of the squad's next lesson in this subject.

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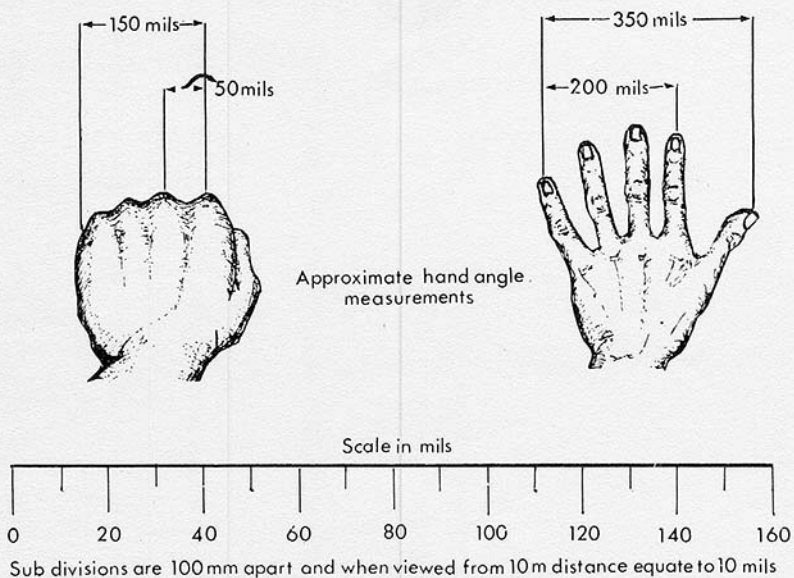


Fig 11.—Hand angle scale

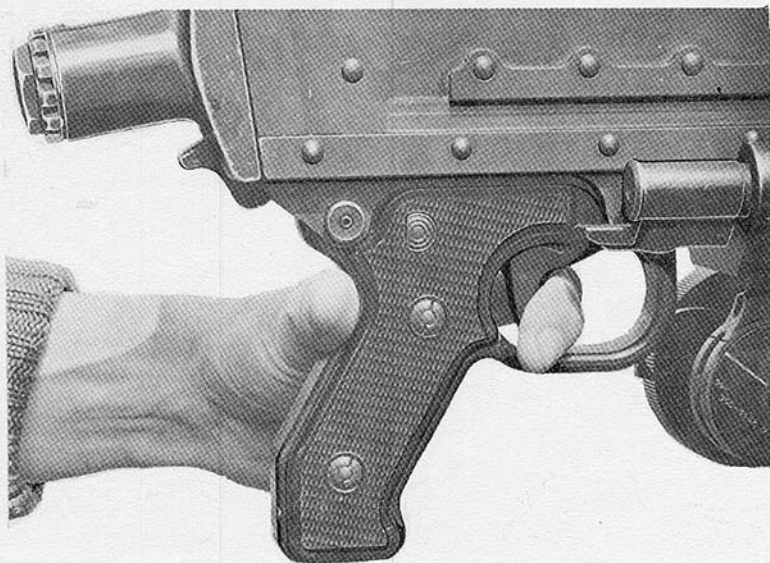


Fig 12.—Correct position of the left hand

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Appropriate hand angle
measurements

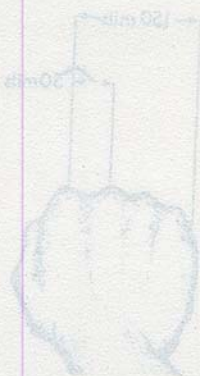


Fig 11 - Hand angle scale

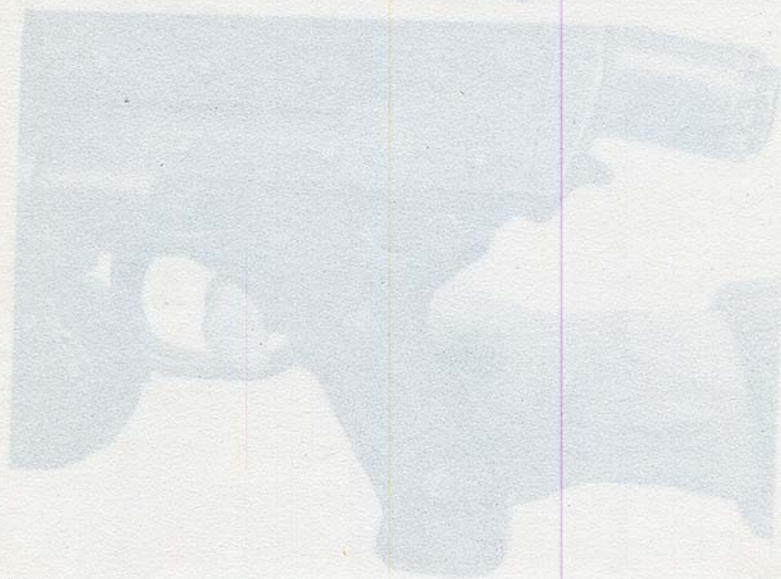


Fig 12 - Correct position of the left hand

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LESSON 2.—FIRING DRILLS WHEN USING THE IRON SIGHTS

A. INSTRUCTOR'S NOTES

40. *Aim.* To teach the types of target, rates of fire and firing drills when using the iron sights.
41. *Timings.* Two 40 minute periods.
42. *Method.* A basic instructional outdoor period.
43. *Stores:*
- | | |
|---------------------------|--|
| GPMGs | 1 per two soldiers |
| SF kits (complete to CES) | 1 per gun |
| Ammunition Boxes | 1 per gun |
| Drill rounds (belted) | 20 per gun (minimum) |
| Sandbags (half filled) | 3 per gun |
| Landscape target | 1 per gun (if the lesson is taken indoors) |
44. *Preparation:* Reconnoitre the training area to be used and determine:
- Gun positions.
 - Arcs of fire and reference points:
 - A minimum of three point and three traversing targets and the ranges to them.
45. *Miscellaneous:*
- Ensure that the squad is positioned to the right of the deflection drum during this lesson.
 - Number the squad in groups of two and allocate one group per gun prior to normal safety precautions.
 - Revise the squad on the sequence of a fire control order and methods of indication (see Infantry Training, Volume I, Infantry Platoon Weapons, Pamphlet No. 2. Fieldcraft. (All Arms) 1954. Lessons 5 and 11). Include hand angles and, if necessary allow the squad to check them against the prepared scales (see Fig 11).
 - If the lesson is taken indoors:
 - Aiming posts are to be secured to wooden plinths.
 - Position one similar landscape target as far forward from each gun as possible.
 - Chalk mark the position of the tripod legs prior to any laying drills.

B. CONDUCT OF THE LESSON

Preliminaries

46. *Safety Precautions.* Normal (see paragraph 45. b.). Indicate arcs of fire and reference points.

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47. **Revision.** *Revise mounting the gun and tripod, loading, laying, unloading and fire control orders (GRIT).*

Introduction

48. **Explain.** In order to effectively engage targets in the shortest possible time it is important that the gunner knows the types of target he is expected to engage, how they will be indicated to him and the length of burst and rate of fire he is to employ against them.

Types of Target

49. **Explain.** There are two types of target which are engaged by the GPMG in the sustained fire role.

a. **Point Targets.** Targets which appear at long range to have no appreciable width or depth such as an enemy gun emplacement, the corner of a wood, etc.,

b. **Traversing Targets.** Targets which have width and depth, such as the edge of a wood, a hedgerow, etc. This type of target is not normally more than 50 mils wide and 50 metres deep. It may appear as a straight or irregular line across the front or it may be angled away from the gun position.

50. **Confirm by questions.**

Indication of the Target

51. **Explain.** In order to locate the target in the shortest possible time, the gun controller will normally lay the gun himself and give a brief description of the target and point of aim to the gunner. On occasions, if the gun is being controlled from a position detached from the gun, for example, under the platoon commander's control, a fire control order will have to be given. The gun controller must at all times know the target and the range to it.

52. When a point target is indicated and the order "*Lay*" is given, the gunner acts as previously taught.

53. When a traversing target is indicated, i.e., a hedgerow, the right and left limits are defined. The gunner will be ordered to lay the gun on either of these. He acts as previously taught.

54. If, at any time, the gunner fails to understand a command, he is to call "*Again*".

55. **Confirm by questions.**

Type and Rates of Fire

56. **Explain:**

a. The normal length of burst is 20 rounds. This is necessary to ensure a close pattern of shots in the beaten zone. If shorter bursts are employed they should never be less than 10 rounds.

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- b. The normal rate of fire is 100 rounds (half a box) per minute. The rapid rate is 200 rounds (one box) per minute.
- c. The maximum length of burst and rate of fire are never to be exceeded.

57. *Confirm by questions.*

Firing Drill—Point Target

58. *Explain and Demonstrate.* On the order to fire, use only the left forefinger on the trigger and the thumb behind the pistol grip (see Fig 12). This method does not influence the movement of the gun. The sequence of firing is to:

- a. Put the safety catch to 'F'.
- b. Check the aim through the sight.
- c. Move the head to one side in order to observe the tracer and strike.
- d. Fire the length of burst required.
- e. Check the aim and correct if necessary.
- f. Repeat the procedure.
- g. On the order "Stop", cock the gun, put the safety catch to 'S', ensure that the aim is correct and report "On".

59. *Confirm by practice.*

Firing Drill—Traversing Target

60. *Explain and demonstrate.* On the order "Traversing right/left, fire":

- a. Put the safety catch to 'F'.
- b. Check the aim through the sight.
- c. Move the head to one side in order to observe the tracer and strike.
- d. Fire the length of burst required.
- e. Traverse one click of the deflection drum in the direction ordered.
- f. Repeat the procedure, checking the aim for elevation and correcting as necessary before firing the next burst.
- g. If the order "Stop" is not given, continue the drill until the second limit is reached. Report "Right/left limit . . . on".

61. *Confirm by practice.*

Orders During Firing

62. *Explain and demonstrate where necessary.* If, during firing, the order "Stop" is followed by:

- a. "Noted point of aim".....Check the aim and note the point of the target being aimed at.

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- b. "Relay" Click back to the noted point of aim and when correct report "On". Then await further orders.
 - c. "Same aim—go on" Fire as previously taught for a point target.
 - d. "Traversing right/left—go on" Fire as previously taught for a traversing target.
 - e. "Go right/left six clicks—go on" Adjust for the number of clicks and fire as previously taught.
 - f. "Drop/add 100", etc. Alter the sight, align on to the target and report "On". Then await orders.
63. With a well trained team it is possible to combine some of the commands, for example "Stop—add 100—go right four clicks—go on".

64. *Confirm by practice.*

Barrel Changing

65. *Explain and demonstrate where necessary:*
- a. If fire has to be delivered for long periods, whether at the normal or rapid rate, the barrel is to be changed after every 400 rounds.
 - b. When the gun controller has clipped on the second belt, he warns the gunner "Barrel". He then prepares a barrel for use, checking that the gas regulator is correctly set and that there is no obstruction in the barrel.
 - c. When the belt has been expended, or at a convenient opportunity, the gunner is to unload, cock the gun and order "Barrel". The gun controller changes the barrel.
 - d. The gunner allows the working parts to go forward, reloads, cocks the gun and carries on firing as necessary.
 - e. The three barrels used in the sustained fire role are to be used in rotation.
 - f. In training, if continuous fire of more than 1200 rounds is required, extra barrels are to be used in rotation with the three barrels in the gun kit. To avoid overheating and consequent dangerous stoppages, once any barrel has been used it is not to be replaced on the gun until it is cool enough to be held in the bare hand without discomfort.
66. *Confirm by practice.*

Conclusion

67. *End of Lesson Drill:*
- a. *Questions from the squad on the entire lesson.*
 - b. *Confirm by questions and practice as time permits.*

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- c. *Normal safety precautions.*
- d. *Order "Dismount gun and tripod". Pack kit.*
- e. *Summary. To include the following:*
 - (1) *The importance of the method of trigger operation when firing.*
 - (2) *A forecast of the squad's next lesson in this subject.*

LESSON 3.—THE DIAL SIGHT (C2 SIGHT UNIT)

A. INSTRUCTOR'S NOTES

- 68. *Aim. To describe the dial sight, to teach how to set it and take and apply readings.*
- 69. *Timings. Two 40 minute periods.*
- 70. *Method. A basic instructional outdoor period.*
- 71. *Stores:*

<i>GPMGs</i>	<i>1 per two soldiers</i>
<i>SF kits (complete to CES)</i>	<i>1 per gun</i>
<i>Ammunition boxes</i>	<i>1 per gun</i>
<i>Drill rounds (belted)</i>	<i>20 per gun (minimum)</i>
<i>Sandbags (half filled)</i>	<i>3 per gun</i>
<i>Target information sheets</i>	<i>1 per gun (but see paragraph 72. a.)</i>
<i>Landscape targets</i>	<i>1 per gun (if the lesson is taken indoors)</i>
- 72. *Preparation:*
 - a. *Prepare a blank target information sheet on a chalkboard as an alternative to issuing one to each gun.*
 - b. *Reconnoitre the training area to be used and determine:*
 - (1) *Gun positions.*
 - (2) *Arcs of fire and reference points.*
 - (3) *A minimum of three point targets.*
- 73. *Miscellaneous:*
 - a. *The squad can be positioned on the left side of the elevation drum, directly behind their guns or issued with dial sights off the tripod.*
 - b. *Adjust all scale rings and set direction readings at 0000 mils and elevation readings at 0800 mils.*

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c. It is important that the squad are constantly reminded of the importance of setting the scale ring of the bearing coarse scale with the 'O' in line with the upper index.

d. Change gun teams frequently.

e. Use the reading recorded during "Taking readings" (paragraph 85) to conclusively teach "Applying readings" (paragraph 86 and 87).

f. Short cuts used in aligning the telescope on to the aiming lamp should be avoided as they are not possible during darkness when the dial sight is mostly used.

g. Old pattern dial sights are to be set at 3200 mils before replacing in their box.

h. If the lesson is taken indoors:

(1) Aiming posts are to be secured to wooden plinths.

(2) Position one similar landscape as far forward from each gun position as possible.

(3) Chalk mark the position of the tripod legs after mounting.

B. CONDUCT OF THE LESSON

Preliminaries

74. **Safety Precautions.** Normal. Indicate arcs of fire and reference points. Order "High mount position—mount gun and tripod" (see paragraph 73. a.).

75. **Revision.** Revise, where necessary, firing at one point and one traversing target. Leave guns mounted after last practice.

Introduction

76. **Explain.** The dial sight and aiming lamp together provide the gun team with a method of aiming at targets which, due to fog, smoke or darkness, can no longer be viewed through the iron sight. The dial sight takes over the role of the iron sight and the aiming post the role of the target. It is of vital importance for the gun team to understand the mechanics of the dial sight and how to apply target readings for elevation and direction with it.

The Dial Sight (see Fig 13).

77. **Explain.** The sight consists of a telescope, bearing scales on the top half and elevation scales on the lower half.

78. **Telescope.** (See Fig 14 for the correct aim picture.) Explain and demonstrate. The telescope is mounted on the top of the dial sight and can be moved up and down. When in the desired position it can be locked by means of a clamp lever. The eyepiece can be rotated so that the open sight can be used for rough alignment. A corrector to reduce laying errors is fitted to the front of the telescope.

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79. *Confirm by questions.*

80. **Bearing Scales and Setting a Reading.** *Explain and demonstrate.* The two bearing scales are used to record the readings for direction to the aiming post. The coarse scale records in hundreds of mils and the fine scale records in tens and units of mils. The scales are secured by a bearing clamp lever below the front of the telescope. This clamp prevents movement of the scales during firing and it is applied when in the raised position.

a. On the coarse scale, the scale ring is always to be set with 'O' in line with the white upper index before use (see Fig 13). To do this, loosen the screw type clamp if necessary and rotate the scale ring; tighten the clamp. The lower index indicates the direction reading in hundreds of mils. The scale is numbered every 200 mils.

b. On the fine scale, the scale ring is secured by a wing nut. This scale is always to be set with 'O' opposite the outer index before use (see Fig 16). If necessary, to do this loosen the wing nut and rotate the scale, then tighten the wing nut. The inner index indicates the direction reading in tens and units of mils. The scale is numbered every 10 mils.

c. The complete reading for direction is the combined total on the two scales.

d. When setting a reading, a quick release mechanism is used to set the hundreds of mils, for example, to set 0820 mils:

(1) Disengage the bearing clamp lever.

(2) Push forward the fine scale and, ensuring that it is held fully forward, rotate the mechanism until the required hundreds reading (8) on the coarse scale is reached. Release the fine scale and ensure that it engages correctly.

(3) Rotate the fine scale until the tens and units (20) is opposite the inner index.

(4) Check the reading on the coarse scale.

(5) Apply the clamp lever.

81. *Confirm by practice*

82. **Elevation Scales and Setting a Reading.** *Explain and demonstrate.* Elevation readings are also recorded on two scales.

a. The coarse scale is on the side of the sight. It is graduated from 0600 to 1600 mils and is numbered every 200 mils. A pointer indicates the reading in hundreds of mils (see Fig 15).

b. The fine scale has an index which indicates the readings in tens and units of mils. It is numbered every 10 mils. The elevation clamp lever is below the fine scale. It is applied when it is moved to the left.

c. The complete reading for elevation is the combined total on the two scales.

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- d. When setting a reading, for example 1020 mils:
 - (1) Disengage the elevation clamp lever.
 - (2) Rotate the fine scale until the required hundreds reading (10) is reached on the coarse scale.
 - (3) Continue the rotation until the tens and units reading (20) is opposite the index.
 - (4) Check the reading.
 - (5) Apply the clamp.
- e. Readings can be set to half mil accuracy for example 0825.5 mils.
- f. The elevation bubble is in front of the elevation fine scale. The other bubble is not used for the GPMG (SF).

83. *Confirm by practice.*

Taking Readings For a Target

84. *Explain and demonstrate where necessary.* So that targets can be engaged effectively during darkness, fog or smoke, their readings for elevation and direction require to be determined at the very earliest opportunity. On the command "Mark" the gunner is to act as follows:

a. *Elevation.*

- (1) Check that the iron sight is on the target.
- (2) Disengage the elevation clamp and rotate the elevation fine scale until the cross levelling bubble in front of the scale is level.
- (3) Apply the clamp.

b. *Direction.*

- (1) Check that the 'O' and upper index are in line.
- (2) Fold down the telescope sight eyepiece and disengage the bearing scale clamp.
- (3) Adjust the quick release mechanism as taught and roughly align the telescope open sight on to the aiming post.
- (4) Release the telescope clamp lever and adjust the telescope until the aiming lamp is in view. Apply the clamp lever.
- (5) Rotate the bearing fine scale until the perpendicular line of the reticle passes through the centre of the aiming lamp.
- (6) Release the telescope clamp lever and adjust the telescope until the aim is correct. This is the noted point of aim. Apply the clamp lever.

c. Recheck the elevation bubble.

d. When all actions are complete, report "On".

e. On the command "Record" the gun controller is to record the reading at the earliest opportunity.

f. These orders may on occasions be combined, i.e., "Mark . . . record".

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85. *Confirm by practice. (Record the target readings (see paragraph 73. e.).)*

Apply Readings

86. *Explain and demonstrate.* Using the dial sight, an aim can be laid quickly on to targets during darkness, fog, or smoke, provided that their readings are known. On the elevation and direction readings being ordered, for example, "Gunner. Elevation 0810 Direction 1430 . . . Lay": (see paragraph 73. e.)

- a. Check that the 'O' and upper index on the bearing coarse scale are in line.
- b. Disengage the bearing and elevation clamps.
- c. Set the readings for elevation and direction as previously taught. Engage the clamps.
- d. Fold down the telescope eye piece, unlock the tripod and align the open sight on the aiming lamp.
- e. Roughly align for elevation by ensuring that the elevation bubble is nearly central. Lock the tripod.
- f. Look through the telescope and, using the deflection drum of the tripod, adjust the aim on to the aiming lamp as previously taught. During wet weather it is important that the telescope eye piece is folded down after use.
- g. Using the elevation drum of the tripod, centralize the elevation bubble. (The gun should now be pointing at the target.)
- h. Report "On".
- j. During all drills, the gun team are to ensure that their actions in no way detract from their concealment.

87. *Confirm by questions.*

Conclusion

88. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Confirm by questions and practice as time permits.*
- c. *Normal safety precautions.*
- d. *Order "Dismount gun and tripod". Pack kit.*
- e. *Summary. To include the following:*
 - (1) The importance of frequently checking the position of the 'O' and upper index.
 - (2) A forecast of the squad's next lesson in this subject.

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85. Confirm by practice (Review the target readings (see paragraph 7.2.2.))

Apply Readings

86. Explain and demonstrate. Using the dial sight, an aim can be laid quickly on targets during darkness, fog, or smoke, provided that their readings are known. On the elevation and direction readings being ordered, for example, "Downward. Elevation 6810 Direction 1410." (See paragraph 7.2.2.)

- Check that the 'O' and upper index on the bearing counter scale are in line.
- Disengage the bearing and elevation change.
- Set the readings for elevation and direction as previously taught. Engage the change.
- Fold down the telescope eye piece, release the tripod and align the open sight on the aiming lamp.
- Roughly align for elevation by ensuring that the elevation bubble is nearly central. Lock the tripod.
- Look through the telescope and, using the deflection drum of the tripod, adjust the aim on to the aiming lamp as previously taught. During wet weather it is important that the telescope eye piece is folded down after use.
- Using the elevation drum of the tripod, equalize the elevation bubble. (The gun should now be pointing at the target.)
- Report "On".
- During all drills, the gun team are to ensure that their actions in no way detract from their commitment.

87. Confirm by question.

Conclusion

88. End of Lesson Drill:

- Questions from the squad on the current lesson.
- Confirm by question and practice as time permits.
- Forward safety precautions.
- Order "Dismount gun and tripod". Pack kit.
- Summary. To include the following:
 - The importance of frequently checking the position of the 'O' and upper index.
 - A forecast of the squad's next lesson in this subject.

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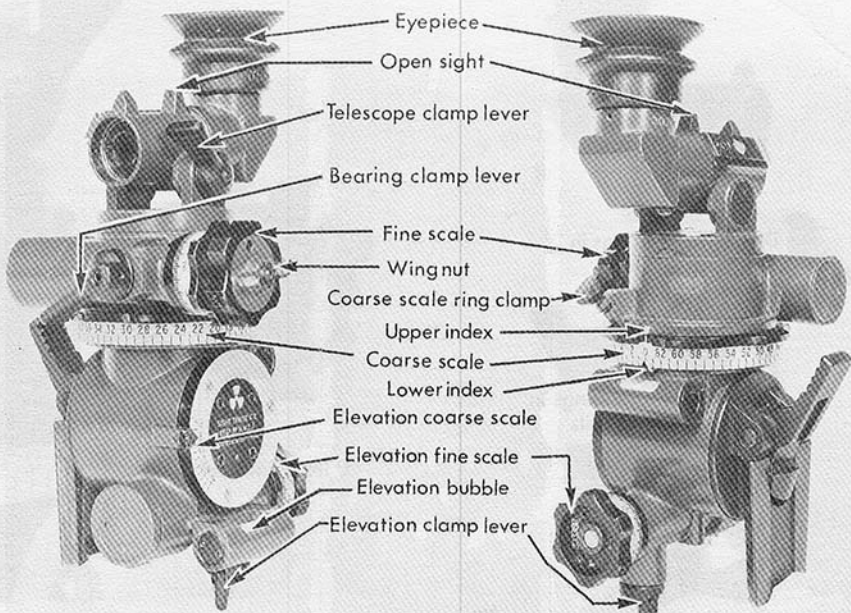


Fig 13.—The dial sight (C2 sight unit)

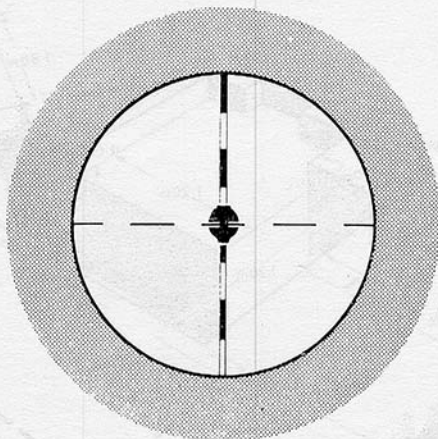
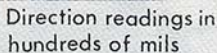


Fig 14.—Correct aim picture (telescope)

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Elevation readings in
hundreds of mils

Fig 15.—Direction and elevation readings in hundreds of mils.

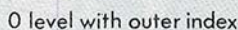
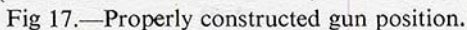


Fig 16.—Constant setting—fine scale.



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LESSON 4.—FIRING DRILLS WHEN USING THE DIAL SIGHT

A. INSTRUCTOR'S NOTES

89. *Aim.* To teach the gunner how to apply fire and make adjustments when using the dial sight.
90. *Timings.* One 40 minute period.
91. *Method.* A basic instructional outdoor period.
92. *Stores:*
- | | |
|--------------------------|--|
| GPMGs | 1 per two soldiers |
| SF kit (complete to CES) | 1 per gun |
| Ammunition boxes | 1 per gun |
| Drill rounds (belted) | 20 per gun (minimum) |
| Sandbags (half filled) | 3 per gun |
| Landscape target | 1 per gun (if the lesson is taken indoors) |
93. *Preparation:*
- Reconnoitre the training area to be used and determine:
 - Gun positions.
 - Arcs of fire and reference points.
 - A minimum of seven point targets and seven traversing targets.
94. *Miscellaneous:*
- The squad should be positioned to the left of the lock lever.
 - Practice in barrel changing should be introduced at appropriate times.
 - Move the scale ring off the upper index on each dial sight before revision.
 - It is important that instructors utilise the issuing of corrections during firing to the utmost during this period.

B. CONDUCT OF THE LESSON

Preliminaries

95. *Safety Precautions.* **Normal.** Indicate arcs of fire and reference points.
96. *Revision.* Revise firing drills with the iron sight.

Introduction

97. *Explain.* It is the responsibility of the gun controller to determine when dial sight readings are to be taken and recorded. It is the responsibility of the gunner to apply fire on to the target using those readings.

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Firing Drill

98. *Explain.* The gunner is to use the dial sight in the engagement of a target only when a correct aim can no longer be taken with the iron sight. Firing drills are as taught but the following are to be borne in mind:

- a. *Point Target.* On the command "*Fire*" or "*Go on*" check that the aim on to the aiming lamp is correct and that the elevation bubble is central before firing each burst. Any adjustments necessary are to be made using the drums on the tripod.
- b. *Traversing target.* On the command "*Traversing left/right . . . fire/go on*" check that the elevation bubble is central before firing each burst. Any adjustment necessary is to be made using the elevation drum on the tripod.
- c. On the command "*Stop*", or "*Stop . . . Relay*" act as previously taught and confirm the direction and elevation before reporting "*On*".
- d. On the command "*Drop/add . . . mils*", adjust the dial sight by the number of mils ordered, centralize the elevation bubble and report "*On*".
- e. On the command "*Go left/right . . . clicks*", adjust the direction by the number of clicks ordered, re-mark, and report "*On*".
- f. On the command "*Re-record*" delete existing entry and replace with new readings.

99. *Confirm by practice.*

Conclusion

100. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Confirm by questions and practice as time permits.*
- c. *Normal safety precautions.*
- d. *Order "Dismount gun and tripod". Pack kit.*
- e. *Summary. To include the following:*
 - (1) The importance of checking that the 'O' and upper index are in line before using the dial sight.
 - (2) A forecast of the squad's next lesson in this subject.

LESSON 5.—PREPARATION FOR NIGHT FIRING

A. INSTRUCTOR'S NOTES

101. *Aim.* To teach how to prepare a final protective fire (FPF) task, the actions required on the signal to open fire and the preparation of other defensive fire (DF) tasks.

102. *Timings.* One 40 minute period.

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103. **Method.** *A basic instructional outdoor period.*
104. **Stores:**
- | | |
|---------------------------|----------------------|
| GPMGs | 1 per two soldiers |
| SF kit (complete to CES) | 1 per gun |
| Ammunition boxes | 1 per gun |
| Drill rounds (belted) | 20 per gun (minimum) |
| Target information sheets | 1 per gun |
| Sandbags (half filled) | 3 per gun |
105. **Preparation.** *Reconnoitre the training area to be used and select:*
- Gun positions.*
 - Arcs of fire and reference points.*
 - A minimum of two FEBAs, two point and one traversing target, together with their ranges. (See paragraph 106. a.)*
106. **Miscellaneous:**
- FEBAs should be selected at a range of approximately 600 metres so that theoretically full use is being made of the low trajectory of the rounds.*
 - If firing practice is to be included during the demonstration or squad practice, the instructor is to order "Load" after paragraph 112. h.*
 - During squad practice in preparing the FPF, the instructor is to act as the defence section commander.*
 - During squad practice in preparing tasks other than FPF, order one task to be prepared and, after completion, allow the squad to lay the gun back on to the FPF before ordering the next task to be prepared.*

B. CONDUCT OF THE LESSON

Preliminaries

107. **Safety Precautions.** *Normal. Indicate arcs of fire and reference points. Order "Mount gun and tripod".*
108. **Revision.** *Revise firing drills with the dial sight..Order "Unload" after the last practice.*
- Introduction**
109. **Explain.** *When it is planned to engage one or more targets during the night, the preparation is carried out during daylight hours. The target tasks are recorded on an information sheet and the gunner is to fire as ordered by the gun controller.*
- Final Protective Fire (FPF) Task**
110. **Explain.** *Normally the FPF task for the GPMG (SF) is one where the gun is fired across the front of a manned forward position, laying down a belt of fire*

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through which an attacking enemy would have to pass. This task (formerly known as a DF SOS task) is the gun's most important task and the gun is sited primarily so as to undertake it. Preparation and registration by firing requires to be carried out in daylight. The Defence Section Commander and the gun controller need to know the area to be protected and the position where the gun and tripod are to be mounted. For this type of FPF task a safety angle in front of the manning troops will be ordered. The size of safety angle will be dependent on the ground and cover available but **IT IS NEVER TO BE LESS THAN 50 MILS.** The gun is to be aligned on the FPF task when not engaged in any other task.

111. *Confirm by questions.*

Preparation of FPF Task

112. *Explain and demonstrate.* When the selected fire position and forward edge of the battle area (FEBA) are indicated, the following actions are to be carried out:

- a. Mount the gun and tripod as previously taught.
- b. Ensure that the gun is not loaded, set the sights as ordered and aim at the point on the FEBA from which the safety angle is to be measured and report "On".
- c. On the command "Mark" act as previously taught.
- d. The gun controller is to check and record the reading for direction.
- e. The defence section commander checks the direction reading, then adds or subtracts the angle ordered for safety and orders "Direction . . . mils lay".
- f. Relay the reading to the aiming lamp as previously taught and keep the elevation bubble as near to central as possible. Report "On".
- g. The defence section commander and the gun controller check the line through the iron sight and select a suitable area of ground where the beaten zone is to fall. The aim is laid on that area. (It may well be necessary to lay off more than the prescribed safety angle to ensure that the maximum advantage is taken of the available ground.)
- h. If the order to fire is given (see paragraph 106. b.), carry out the actions as previously taught.
- j. On the command "Record" act as previously taught.
- k. The gun controller is to check the aim through the iron sights and the telescope and then check and record the readings for elevation and direction and sight setting on the target information sheet.

113. *Confirm by practice.*

Firing FPF

114. *Explain:*

- a. During the hours of darkness, a sentry is to be posted beside the gun.

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- b. The gun is to be fired only on a pre-arranged FPF signal.
- c. When the signal is given, fire will normally be at the rapid rate. Details of signals and rates of fire will be given when sentries mount.
- d. Barrels should be changed as taught.
- e. The gun must be fired only at the recorded line and elevation.
- f. The gunner must maintain a constant check on the elevation bubble and on the aim through the telescopic sight.

115. *Confirm by questions.*

Preparation of Defensive Fire (DF) Tasks

116. *Explain.* In addition to the FPF task, other tasks may be recorded as necessary:

- a. Actions on the commands "Load, lay, fire, etc.", are as previously taught.
- b. On the command "Mark . . . Record" act as previously taught. The gun controller is to check and record the sight setting and the readings for elevation and direction on the target information sheet.
- c. The procedure is to be followed for each target indicated.
- d. Once the preparation has been completed, the gun is never to be left unattended and is always to be laid on the FPF when not involved in engaging a DF task.
- e. Additional preparations necessary if the selected position cannot be occupied until later will be taught in a future lesson.

117. *Confirm by practice (see paragraph 106. d.).*

Conclusion

118. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Confirm by questions and practice as time permits.*
- c. *Normal safety precautions.*
- d. *Order "Dismount gun and tripod". Pack kit.*
- e. *Summary. To include the following:*
 - (1) The importance of aligning the gun on to the FPF when not engaging any other task.
 - (2) A forecast of the squad's next lesson in this subject.

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LESSON 6—PREPARATION OF GUN POSITIONS FOR LATER OCCUPATION

A. INSTRUCTOR'S NOTES

119. *Aim.* To teach platoon commanders and gun controllers the method of preparing gun positions for later occupation.
120. *Timings.* One 40 minute period.
121. *Method.* A basic instructional outdoor period.
122. *Stores:*
- | | |
|---------------------------|----------------------|
| GPMGs | 1 per two soldiers |
| SF kit (complete to CES) | 1 per gun |
| Ammunition boxes | 1 per gun |
| Drill rounds (belted) | 20 per gun (minimum) |
| Target information sheets | 1 per gun |
123. *Preparation.* Reconnoitre the training area to be used and select:
- Gun positions.
 - An FPF and three DF tasks and their ranges common to all guns.
124. *Miscellaneous.* Short cuts used in re-positioning the tripod should be avoided as they are not possible during darkness when this drill is used.

B. CONDUCT OF THE LESSON

Preliminaries

125. *Safety Precautions.* Normal. Indicate the gun tasks to the gun controllers. Order "Mount gun and tripod".
126. *Revision.* Nil.

Introduction

127. *Explain.* There will be occasions when the gun numbers are unable to occupy a gun position during the period of dusk with sufficient time to record their tasks. This can happen if sustained fire is required from another position during the day or if the gun is required in its light role until darkness. It will then be necessary to prepare the position in daylight so that it can be occupied at night.

Preparation and Later Occupation of a Position

128. Using one of the selected tasks, explain and demonstrate as necessary:
- Preparation*
 - Record the gun task as previously taught.

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- (2) Position the three small pegs from the holdall to mark the site of each tripod shoe.
- (3) Remove the gun, taking care not to disturb the tripod, and place the triangular tripod marker plate centrally beneath the tripod. Check the central positioning of the plate by looking vertically downwards through the hole in the centre of the tripod head and aligning the mark on the centre of the plate through the hole. Ensure that the corners of the marker plate point to the sites of the tripod shoes.
- (4) Dismount the tripod, taking care not to disturb the pegs and the marker plate. The aiming post is to be left in position.

b. *Occupation.*

- (1) Collect and check the gun and its equipment.
- (2) On arrival at the position the gun controller is to mount the tripod on its former site, ensuring that the hole in the tripod head is vertically above the mark on the marker plate and that the tripod shoes are in the former sites marked by the pegs.
- (3) The gunner mounts the gun on the tripod as taught.
- (4) The defence section commander and the gun controller check that the task readings from the target information sheet are set on the dial sight.
- (5) The gunner lays the gun as taught and the order "Load" is then given.
- (6) The gun controller is to ensure that all necessary ammunition and stores are positioned by the gun.

129. *Confirm by practice.*

Conclusion

130. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Confirm by questions and practice as time permits.*
- c. *Normal safety precautions.*
- d. *Order "Dismount gun and tripod". Pack kit.*
- e. *Summary. To include the following:*
 - (1) The importance of correct positioning of the hole in the tripod head and the mark on the marker plate during occupation of the position.
 - (2) A forecast of the squad's next lesson in this subject.

LESSON 7—HANDLING

A. INSTRUCTOR'S NOTES

131. *Aim. To teach the soldier how the gun team is organised and equipped, and team handling in the field.*

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132. **Timings.** Two 40 minute periods.
133. **Method.** A basic instructional outdoor period.
134. **Stores:**
- | | |
|---------------------------|--------------------|
| GPMGs | 1 per two soldiers |
| SF kit (complete to CES) | 1 per gun |
| Ammunition boxes | 2 per gun |
| Bandoliers | As available |
| Rifles | 1 per gun team |
| Steel helmets | 1 per soldier |
| Target Information Sheets | 2 per gun |
135. **Preparation.** Reconnoitre the training area to be used and select:
- A company attack objective, route and reorganisation location.
 - Gun positions and three fire supporting tasks related to the company route to the objective.
 - Gun positions for the reorganisation (see paragraph 136. a.) and a FPF and three DF tasks related to the company reorganisation location.
136. **Miscellaneous:**
- Ideally, the gun team should occupy a properly constructed gun position (see Fig 17) during the reorganisation. If this is not practical, arrangements should be made for them to see one before or during the lesson.
 - During the lesson, the instructor is to act as defence section commander when necessary and give FCOs and adjustments. He should be fully conversant with Lesson 11—Fire Tasks in Defence and Attack.
 - During practice particular attention should be paid to:
 - Exposure during mounting.
 - Crest clearance.
 - To obtain maximum squad activity the use of a third man in carrying the SF equipment should be included in practice.

B. CONDUCT OF LESSON

Preliminaries

137. **Safety Precautions.** Normal.

138. **Revision.** Nil.

Introduction

139. **Explain.** The knowledge acquired as an individual must now be applied to handling within the team. The GPMG is used to give support to the platoon or company in both defence and attack. This lesson is concerned with the drills and duties of the team in the attack, on reorganization and in defence.

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Team Organization

139. *Explain:*

- a. When SF equipment is carried, suggested loads are as follows:

Duty in team	Equipment	Ammunition
Gunner.	GPMG (over the shoulder). Spare parts wallet. Dial sight.	300 rounds in bandoliers.
Gun controller.	Tripod (carried over the shoulder with front legs hanging in front of the body).	300 rounds in bandoliers.
Extra man from a section.	Spare barrels. Aiming posts and lamp. Spare recoil spring in small holdall.	400 rounds in belt boxes.

b. If an extra man can not be made available from a rifle section then the suggested loads will have to be varied.

c. No matter what arrangements are made within the company in the way of assistance in the carriage of the SF equipment, it is to be remembered that the gunner is always responsible for the gun and that other gun numbers carry their personal weapons.

Suggested Handling

140.

- Lead the gun teams complete with their equipment to a position behind cover near the place where the guns are to be mounted.*
- Indicate three targets and their ranges for providing supporting fire in a company attack and include timings (H hour).*
- Order "Mount gun and tripod".*
- During the engagement of the targets include adjustments and the reaction to a target becoming obscured.*
- Move to selected reorganization gun locations.*
- Indicate FPF and three DF tasks and order the preparation for night firing using target information sheets.*
- Give the signal for DF and FPF tasks.*

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Conclusion

141. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Confirm by questions and practice as time permits.*
- c. *Normal safety precautions.*
- d. *Order "Dismount gun and tripod". Pack kit.*
- e. *Summary. To include the following:*
 - (1) *The importance of keeping exposure to a minimum during the occupation of a fire position.*
 - (2) *A forecast of the squad's next lesson in this subject.*

LESSON 8.—INTRODUCTION TO FIRE CONTROL

A. INSTRUCTOR'S NOTES

142. *Aim. To teach the characteristics of machine gun fire and the capabilities and limitations of the GPMG in the sustained fire role.*

143. *Timings. One 40 minute period.*

144. *Method. A lecture for gun controllers. The Filmstrip, Theory of Small Arms Fire, Catalogue No. 863 should be shown immediately prior to this lecture.*

145. *Stores:*

<i>Overhead projector and screen</i>	<i>1</i>
<i>Chalkboard</i>	<i>1</i>
<i>Vufoils or Drops (as listed in para 146.)</i>	
<i>Chalk (various colours)</i>	<i>As required</i>

146. *Preparation. The following aids in either vufoil or drop form should be prepared:*

a. *RANGE TABLES (see Fig. 21).*

b. *CAPABILITIES OF (SF) GUN*

- (1) *Observed Shoots.*
- (2) *Obscured Shoots.*
- (3) *Overhead Fire.*

c. *LIMITATIONS*

Not Equipped or Designed to Fire Indirect Tasks

d. *AMMO SCALES/RATES OF FIRE*

<i>Training</i>	<i>68000 rds per BN per year</i>
<i>First line</i>	<i>5000 rds per (SF) kit</i>
<i>Barrels</i>	<i>3 (one on the gun)</i>
<i>Normal</i>	<i>100 rds per minute</i>
<i>Rapid</i>	<i>200 rds per minute</i>

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e. **PRINCIPLES OF MG FIRE**

Best Fire Effect on the Whole Target
Safety of Own Troops
Economy of Time and Ammunition
Simplicity and Speed
Surprise Effect

f. **SITING OF GUNS**

In Defilade
To Fire Enfilade
Local Protection
Grouped in Twos or Threes
Command
Group—HQ PL COMD/SGT/DEF CPL
Single—Gun Controller

g. **TYPES OF TARGET**

Point target—No Apparent Width/Depth
Traversing target—Width and Depth
Maximum 50 mils Width,
50 metres Depth

147. **Miscellaneous:**

- a. *It is essential that the squad is fully conversant with the theory of small arms fire prior to receiving this lecture.*
- b. *When using vufoils, expose only that heading which is relevant to the stage being taught.*
- c. *Rehearse the lecture, including the use of vufoil/drops.*

B. **CONDUCT OF THE LESSON**

Preliminaries

148. *Safety Precautions. Not applicable.*

149. **Revision.** *Revise the following terms from the theory of SA fire—trajectory, culminating point, cone of fire, beaten zone (short range, long range, forward slope, rising ground).*

Introduction

150. **Explain.** In order to use the GPMG (SF) to its best advantage, it is essential that gun controllers understand the principles for employing machine gun fire and the capabilities and limitations of the GPMG (SF) in this role.

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Effect of Trajectory and Beaten Zone on Tactical Employment

151. *Explain:*

- a. Owing to the flat trajectory of the gun at ranges up to about 600 metres, the machine gun is capable of laying a belt of fire 600 metres long on flat ground the bullets never rising more than four feet above the ground. This is a valuable asset in defence.
- b. As it is obviously desirable to place the length of the beaten zone along the target when engaging wide targets, machine guns are best sited to a flank where they can employ artificial enfilade fire.
- c. At ranges up to 1100 metres the length of the beaten zone of the gun will only be reduced below 70 metres when it is striking rising ground or obstructions, or when the gun is firing from an elevated position. (*Vufoil paragraph 146. a.*)

152. *Confirm by questions.*

Capabilities and Use of the GPMG (SF)

153. *Explain: (Using vufoil paragraph 146. b. and c.)*

- a. *Observed shoots.* As a direct fire weapon, to engage targets on which fire effect can be observed, i.e., up to the limit of burn-out of tracer (1100 metres) or by noting the strike. Only under exceptional circumstances should the GPMG be fired at ranges between 1100 and 1800 metres; for example, when the ground surrounding the target affords good observation of strike.
- b. *Obscured shoots.* To engage targets in darkness or when obscured by smoke, fog or bad visibility, such targets must be previously recorded in daylight or good visibility. Such targets will normally only be engaged on the line and elevation. However it is at all times the gun controller's responsibility to engage the target in the most effective possible manner. Targets cannot be plotted off a map.
- c. *Overhead fire.* Due to the flatness of the trajectory and the length of the beaten zone, overhead fire should not be attempted on service unless the configuration of the ground allows the gun to be sited on a high feature. **Targets are NOT to be less than 500 metres ahead of our own troops, and must be within tracer burn-out range, so that safety can be controlled by observation of tracer.**
- d. *Limitations.* The gun is neither equipped nor designed for indirect fire tasks.

154. *Confirm by questions.*

Ammunition, (SF) Barrels and Rates of Fire

155. *Explain: (Using vufoil paragraph 146. d.)*

- a. *Ammunition.*
 - (1) Training. The scale of training ammunition for the GPMG (SF) is 6800 rounds per battalion per year.

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(2) First line. The first line scale of ammunition for the SF role is 5000 rounds per SF kit.

b. *Barrels.* The GPMG (SF) kit includes two barrels. These barrels, should as far as is possible be given equal wear.

c. *Rates of Fire.*

(1) The rates of fire are:

Normal — 100 rounds per minute (half a box)

Rapid — 200 rounds per minute (one box)

(2) If rapid fire of 200 rounds per minute is used continuously, a mean barrel life of at least 12000 rounds can be achieved firing the barrels in rotation.

(3) Barrels should be changed every 400 rounds, this is necessary to avoid overheating and to maintain equal wear. During prolonged firing the gun controller must decide, in view of the situation, whether or not the rate of fire can be reduced in order to avoid overheating of barrels, strain of working parts and excessive expenditure of ammunition.

156. *Confirm by questions.*

Principles of Machine Gun Fire

157. *Explain: (Using vufoil paragraph 146. e.)*

a. The principles which govern the methods of applying machine gun fire are:

(1) The best fire effect on the whole target.

(2) Safety of our own troops.

(3) Economy of time and ammunition.

(4) Simplicity and speed.

(5) Surprise effect.

b. Fire control orders must be framed in such a way that all these requirements are met. The system of fire control is worked out on the above basis and should be adhered to. Occasionally the situation may not permit the principles here given to be observed in their entirety, but common sense and a knowledge of how they are arrived at will enable the best fire effect to be obtained.

158. *Confirm by questions.*

Siting of GPMGs (SF)

159. *Explain: (Using vufoil paragraph 146. f.)*

a. Guns in the SF role are best sited in defilade from enemy fire and able to fire in enfilade against likely enemy targets. They should be sited within or very close to a section position for protection.

b. Maximum effect can be obtained if guns are sited in groups of two or three, the group commander of which may be the headquarters platoon commander or sergeant, or the defence section corporal. The gun controller still remains responsible for the safety and individual control of his gun, subject to the orders

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of the group commander. Detailed siting of guns is to be carried out under the direction of the company commander.

c. When guns are sited singly, each gun is commanded by the gun controller, who must be capable of controlling and directing fire by day and by night.

160. *Confirm by questions.*

Training of Personnel

161. *Explain:*

a. Normally the gun team will consist of two men:

The gun controller

The gunner

A third man from a rifle section may be employed on occasion to help move kit.

b. The number of men per unit to be trained in the SF role will be decided by the commanding officer.

Duties of the Gun Controller

162. *Explain.* The gun controller should be able to bring fire to bear on to any part of the target, and observation of fire will enable him to order adjustments as required. He should be in a position which allows him to control and direct fire by verbal fire control orders, either from beside the gun or if necessary for observation of strike, from a displaced OP.

Types of Target

163. *Explain. (Vufoil paragraph 146. g.)* Targets engaged by the GPMG (SF) are:

a. *Point Targets.* Targets which appear to have no appreciable width or depth, i.e., a $\frac{1}{2}$ -ton truck viewed from 800 metres.

b. *Traversing Targets.* Targets which have width and depth, i.e., a small copse or hedgerow.

164. *Confirm by questions.*

165—166. *Reserved.*

Conclusion

167. *End of Lesson Drill:*

a. *Questions from the squad on the entire lesson*

b. *Confirm by questions as time permits.*

c. *Pack kit (vufoils, drops, etc).*

d. *Summary. To include the following:*

(1) The importance of combining knowledge of the gun's capabilities with common sense to overcome the limitations of the gun.

(2) A forecast of the squad's next lesson in this subject.

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LESSON 9.—SUSTAINED FIRE CONTROL ORDERS

A. INSTRUCTOR'S NOTES

168. **Aim.** To teach how to give fire control orders.
169. **Timings.** Two 40 minute periods.
170. **Method.** A basic instructional indoor period.
171. **Stores:**
- | | |
|---|-------------|
| Landscape target (mounted on softboard) | 1 (minimum) |
| Chalkboard | 1 |
| Overhead projector and screen | 1 |
| Vufoils or drops (as listed in paragraph 172. a.) | |
| Map pins (large) | |
| Chalk (various colours) | |
172. **Preparation:**
- a. Prepare the following vufoils/drops.
- (1) Sequence of a fire control order (see paragraph 180. a.).
 - (2) Ranges over eight hundred metres (see paragraph 181. b. (2)).
 - (3) Orders during firing (see paragraph 183). Do not include gunners' actions.
 - (4) "Mark . . . Record".
- b. Determine:
- (1) Arcs of fire and reference points.
 - (2) A minimum of four point and three traversing targets and their ranges for use during demonstrations.
173. **Miscellaneous.** Use map pins to indicate the position of burst/bursts in relation to target during demonstration.

B. CONDUCT OF THE LESSON

Preliminaries

174. **Safety Precautions.** Not applicable. Indicate arcs of fire and reference points.
175. **Revision.** Revise methods of indication and the principles of applying machine gun fire.

Introduction

176. **Explain.** In order to apply fire on to the target in the shortest possible time, it is important that personnel controlling the fire power of the gun know the types of target the gun is to engage and have a thorough knowledge of the commands which are to be used to get the correct response from the gunner.

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Issuing Fire Control Orders

177. *Explain:*

- a. Whenever possible, the gun controller is to aim the gun on to the target. However there are occasions when he is unable to do so. In such cases, he uses a fire control order to give the range and indicate a point of aim on the target. The gunner aims the gun.
- b. Fire control orders are given in a definite sequence to ensure that errors and omissions are detected immediately and that the gunner, knowing what to expect will act quickly. The orders are to be given clearly and loudly enough for the gunner to hear. The gun controller is to make up his mind what is the correct order to give before embarking on it. Long and unnecessary pauses, during which he is coming to a decision as to the next part of the order, can result only in inaccuracies and slovenly drill. The best fire control order is one which gets bullets on to the target in the shortest possible time and with the minimum of ammunition.

Types of Target

178. *Explain.* The type of fire control order given is determined by the type of target being engaged. There are two types of target which are engaged by the SF gun:

a. *Point Target.*

- (1) A target which, at long range, appears to have neither width nor depth although in actual fact it must have both. For example, the target may be an enemy machine gun position covering a width of perhaps three metres, but to an observer all that is visible may be a small patch of smoke or dust blown about near the gun muzzle.
- (2) A burst or series of aimed bursts is fired until the target has been successfully engaged.

b. *Traversing Target.*

- (1) A target with width such as the edge of a wood, a hedgerow, a ditch, etc.,. It may appear to be a straight or irregular line across the front or it may be angled away from the gun position. The target should not exceed 50 mils in width and its depth should not exceed 50 metres.
- (2) A burst is fired at one of the target limits (extremities). The gun is then traversed in clicks and an aimed burst fired after each until the target has been successfully engaged.

179. *Confirm by questions.*

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Sequence of a Fire Control Order

180. Explain (using vufoil or drop, see paragraph 172. a. (1)).

- a. The sequence of a fire control order is:

Group

Range

Indication of target and 'Lay'

Type of, and order to, fire

- b. When giving out the order, pause at the end of each phase and in particular:

- (1) After giving the range—to allow time to set the sights.
- (2) At various stages during indication—to allow time for points to be recognised, hand angles to be measured, etc.
- (3) After giving "lay"—to allow for the gun to be laid.

Fire Control Orders

181. Explain and demonstrate where necessary (using vufoil or drop, see paragraph 172. a. (1) and (3)).

- a. **Group.** Indicate the addressee. "Gunner"; "No 1 Gun", etc.

- b. **Range.**

(1) The range should normally be obtained by estimation. It can also be determined from a large scale map when the gun position and the target can be accurately plotted. Once a target has been engaged, it may be used as a key range in determining ranges to other targets.

(2) The range if over eight hundred metres is ordered to the nearest 50 metres in the following way:

900—nine hundred

1000—one thousand

1050—one owe fifty

1100—one one hundred

- c. **Indication.**

(1) **Point Target**—The target is indicated as previously taught (*Infantry Training, Volume I. Infantry Platoon Weapons, Pamphlet No. 2., Army Code No 8890. Lesson 5.*) and followed by the order "lay".

(2) **Traversing Target**—The right and left limits of the target are indicated. One of them is nominated and followed by the order "lay".

- d. **Type of, and Order to, Fire.**

(1) If no type of fire is stated, normal is implied. If it is desired to fire rapid, the order "Rapid" is to be given before the order to fire. If traversing fire is desired, the order "Traversing right/left" is to be given before the order to fire.

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(2) Firing is normally commenced by the command "Fire". If during an engagement, firing is temporarily stopped, the order "Go on" may be given to recommence firing.

182. *Confirm by practice.*

Orders During Firing

183. *Explain and demonstrate (using vufoil or drop, see paragraph 172. a. (3)).*

- a. Orders which can be used during a shoot to adjust fire on to the target and the gunner's actions on the receipt of them are as follows:

Gun Controllers Orders	Gunners Actions
1. "Stop"	Stops firing, cocks, the gun, applies the safety catch, checks that the aim is correct for the last burst fired, adjusts it if necessary and reports "On".
2. "Stop . . . noted point of aim" (used when effective strike is observed)	Notes the aim for future use as ordered.
3. "Same again . . . go on"	Commences firing as for a point target.
4. "Go right/left six clicks . . . go on"	Adjusts for the number of clicks ordered and fires as for a point target.
5. "Traversing left/right . . . go on"	Recommences firing as for a traversing target.
6. "Stop . . . relay"	Stops firing, cocks the gun, applies the safety catch, lays the gun on to the noted point of aim and reports "On".
7. "Add/drop 100"	Alters the sights, aligns on to the target and reports "On".

b. With a well trained team it is possible to combine some of the commands, for example. "Stop—add 100—go left four clicks—go on".

c. If adjustments for elevation have been ordered during the engagement of a traversing target, it will be necessary to re-adjust for elevation if the target is to be fully re-engaged. For example "Stop—drop one hundred—relay".

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- d. If the gunner fails to understand any part of a fire control order or adjustments he will call "*Again*".

184. *Confirm by practice.*

The Dial Sight

185. *Explain and demonstrate (using vufoils or drops—see paragraph 172. a. (4) and (5)).* The dial sight and aiming lamp together provide a method of aiming at targets which, due to fog, smoke or darkness, can no longer be viewed by the gunner through the iron sight. The angle between the barrel and the aiming post and the reading of the elevation scales is recorded; each target having its own individual record.

a. "*Mark . . . Record*". It is the gun controller's responsibility to determine when target readings are to be taken and recorded. It is preferable to take them at the earliest opportunity after the range to the target has been established by firing and adjustment. The order to the gunner to align the dial sight on to the aiming lamp is "*Mark*" and to record readings "*Record*". On occasions these orders may be combined "*Mark . . . Record*".

b. *Obscured Targets by Day.* If, during a target engagement using the iron sight the target is likely to become, or is becoming obscured the order "*Stop*" is to be given, followed by any adjustment necessary to hit the important part of the target. The order "*Mark*" is then given. Orders to recommence firing are as previously mentioned.

c. *Night Firing.* When it is planned to engage one or more targets during the night, the preparation is to be carried out during daylight hours as follows:

- (1) Indicate the target.
- (2) If permission to fire has been given, confirm the range to the target by firing and adjustment.
- (3) Order "*Mark . . . record*".

d. *Adjustments to Readings.* If it is by any means known that the gun is missing the target, adjustments should be ordered as follows:

(1) *Elevation.* By adding to or subtracting from the recorded reading for elevation on the dial sight, e.g., "*Elevation . . . drop/add . . . mils*". The number of mils required to effect a 50 metre adjustment is:

500—800 metres: 1 mil

850—1100 metres: 1.5 mils

1150—1450 metres: 2.0 mils

1500—1750 metres: 2.5 mils

1800 metres: 3.0 mils

(2) *Direction.* By clicks on the tripod, e.g., "*Go right 5 clicks*".

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(3) After any adjustment has been made and the target successfully engaged, the new readings for elevation/direction are to be entered on the target information sheets and the previous readings deleted. The order to carry out this drill is "Re-record".

186. *Confirm by questions and practice.*

Conclusion

187. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Confirm by questions.*
- c. *Pack kit.*
- d. *Summary. To include the following:*
 - (1) The importance of clear orders at all times.
 - (2) The importance of the use of "Stop" before ordering adjustments.
 - (3) A forecast of the squad's next lesson in this subject.

LESSON 10.—OBSERVATION OF FIRE AND ADJUSTMENT

A. INSTRUCTOR'S NOTES

188. *Aim.* To teach how to observe strike and how, from that observation, to apply fire to the target.

189. *Timings.* One 40 minute period.

190. *Method.* A basic instructional period best taught immediately prior to Live Firing 3.—Observation of Fire and Adjustment (Field Firing).

191. *Stores:*

Landscape target (mounted on softboard)	1 (minimum)
Chalkboard	1
Overhead projector and screen	1
Vufoils or drops (as listed in paragraph 192. a.)	
Map pins (large)	As required
Chalk (various colours)	As required

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192. Preparation:

a. Prepare the following vufoils/drops:

(1) POINTS TO CONSIDER

Tracer

Ground

Climate

Enemy reaction

Traversing Target

Beaten Zone

(2) METHOD OF ADJUSTMENT

Direction — Small error — Traverse

Large error — Adjust in clicks

Elevation — Order bold adjustments

(3) DISPLACED OP

Adjust on "GUN—TARGET" LINE

b. Determine:

(1) Arcs of fire and reference points.

(2) A minimum of four point and three traversing targets and their ranges for use during practice.

193. Miscellaneous:

a. Obtain as many of the facts in paragraph 197 by asking questions.

b. Use map points to indicate the position of burst/bursts in relation to target during demonstration and practice stages.

c. Do not skip the example for practice from a displaced OP and if necessary confirm answers diagrammatically on the chalkboard.

B. CONDUCT OF THE LESSON

Preliminaries

194. *Safety Precautions. Not applicable.*

195. *Revision. Nil.*

Introduction

196. *Explain.* It is important that the gun controller can estimate, by observing the strike of the bullets, the position of the beaten zone in relation to the target and, when necessary, issue commands to adjust the beaten zone on to the target.

Observation of Fire

197. *Explain: (using vufoil or drop—see paragraph 192. a. (1)).* Good observation of strike is determined largely by the conditions of light and the range to the target;

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however, when observing, it is better to search an area round the target systematically than to look at the target. Some factors to be considered are:

a. Tracer:

(1) It is possible to observe tracer up to 1100 metres in normal circumstances. The four tracer rounds in each 20 round burst should be carefully observed at their point of strike and if the ground round the target area affords good observation of strike, a check should be made to observe any difference between tracer strike and ball strike.

(2) Beyond 1100 metres, tracer strike can not be observed and the gun controller must observe the strike of the burst around the target area; it may be necessary to order a burst of more than 20 rounds to be fired. The possibility of accepting tracer burn out in flight as tracer strike on the ground should always be borne in mind.

b. Ground.

(1) Sand, dry plough, water, chalk sub-soil and any powdery surface generally give a good indication of strike, whereas long grass, wet ground, rocky ground and undergrowth generally do not.

(2) If any area of ground close to the target is especially suitable for observation it is sometimes quicker and more economical to direct fire on to this area in the first instance and to adjust when strike has been observed.

c. Climatic Conditions.

(1) Visibility is affected by light, mist or mirage.

(2) At long ranges, a strong wind tends to blow away any dust caused by strike before it can be observed.

d. Enemy Reaction. The cessation of enemy fire may indicate that fire effect is being obtained.

e. Traversing Targets. It will not always be possible to observe the strike of every burst.

f. Beaten Zone (BZ).

(1) In battle, other guns may be engaging the same target and it may be difficult for a gun controller to identify the strike of his own gun.

(2) When strike is observed it has to be determined whether it is the whole of, or only a portion of the beaten zone and if so, what portion of it. For example, if strike is observed in front of the target, it may be the near end of the beaten zone falling on the target or it may be the far end of the beaten zone falling short of the target.

198. Confirm by questions.

Adjustment

199. *Explain. (Using vufoil or drop see paragraph 192. a. (2)).* The centre of the beaten zone must be centred on the target as soon as possible after the direction, or elevation, or both. The general principles to be observed are:

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a. *Direction.*

- (1) Only adjust when it is certain that full effect is not being obtained.
- (2) If the error is small, traversing right or left will ensure that the target is fully covered.
- (3) If the error is large, measure the adjustment necessary by using binoculars or hand angles and order the adjustment as a number of clicks on the tripod, e.g., "Go right eight clicks".

b. *Elevation.*

- (1) When there is no guide to the amount of adjustment, one bold adjustment is better than a series of small ones.
- (2) When the target is on rising ground, the tendency will be to underestimate the adjustment necessary.

200. *Confirm by practice.*

Displaced OP

201. *Explain and demonstrate. (Using vufoil or drop see paragraph 192 a. (3)).* When the gun controller is well to the flank of the gun or when controlling more than one gun, it must be appreciated that bullets which are falling over or short may appear to be falling right or left of the target. The gun controller must visualize the line, gun-target, and judge accordingly.

202. *Confirm by practice.*

Conclusion

203. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Confirm by questions if time permits.*
- c. *Pack kit.*
- d. *Summary. To include the following:*
 - (1) The importance of the line, gun-target, when ordering adjustments from a displaced OP.
 - (2) A forecast of the squad's next lesson in this subject.

LESSON 11.—THE SELECTION AND RECORDING OF FIRE TASKS

A. INSTRUCTOR'S NOTES

204. *Aim. To teach the selection and recording of GPMG (SF) fire tasks in defence, attack and withdrawal.*

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205. **Timings.** One 40 minute period.

206. **Method.** A lecture for officers and NCOs.

207. **Stores:**

Overhead projector and screen	1
Chalkboard	1
Vufoils or drops (as listed in paragraph 208)	
Chalk (various colours)	As required

208. **Preparation.** Prepare the following vufoils or drops:

a. **PRINCIPLES OF MG FIRE**

Best Fire Effect on the Whole Target
Safety of Own Troops
Economy of Time and Ammunition
Simplicity and Speed
Surprise Effect

b. **IDEAL SITING**

Line of Fire Across Level Ground or Gradual Forward Slope
Area to be Protected to be within 600m of Gun Position

c. **FINAL PROTECTIVE FIRE TASK**

Peacetime Safety 200/570 mils
Wartime Safety Never Less than 50 mils

d. **50 mils SAFETY ANGLE**

Minor Inaccuracies in Aiming
Movement of Tripod Setting
Half the Width of BZ
Strong Wind blowing towards FEBA

e. **NIGHT INFO FOR DETACHMENTS**

Signal for FPF
Rates of Fire to be Employed.
System of Communication during other DF Tasks
Pre-planned Programme

f. **SF TASK NUMBERS**

A Coy	SF 100-199
B Coy	SF 200-299
C Coy	SF 300-399
Spare	SF 400-499
Anti Tk Pl	SF 500-599

(First number is not used)

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g. ATTACK PLAN

Targets and Timings

Alternative Tasks

Commander

Communications

209. Miscellaneous:

- a. *When using vufoils expose only that heading which is relevant to the stage being taught.*
- b. *It is essential that the squad is fully conversant with the theory of small arms fire prior to receiving this lecture.*
- c. *Rehearse the lecture including use of vufoils/drops.*
- d. *Peace time safety angles*
 - (1) *200 mils is for battle inoculation only and adhering to the conditions laid down in Infantry Training, Volume I, Pamphlet No. 31, Army Code No 70495.*
 - (2) *570 mils is for all other training involving troops.*

B. CONDUCT OF THE LESSON

Preliminaries

210. Safety Precautions. Not applicable.

211. Revision. *Revise the principles which govern the methods of applying machine gun fire (using vufoil, see paragraph 208. a.).*

Introduction

212. Explain. Infantry Battalions are issued with GPMG (SF) equipments as follows:

- a. *The Airportable Battalion.*
 - (1) *Three per Rifle Company which includes both the gun and the SF kit organised into a defence section of three two-man detachments.*
 - (2) *Six per Anti Tank Platoon which includes both the gun and the SF kit for use when the platoon is not employed in an anti tank role.*
- b. *The Mechanised Battalion:* Each Mechanised Company has three GPMG (SF) kits but there is no special provision for the guns or manpower to man them.

The principles of employment of the guns apply equally to both the Mechanised Battalion and the Airportable Battalion.

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Principles

213. *Explain.* The following principles govern the siting and use of the GPMG (SF). Whenever possible:

- a. Guns are sited in defilade and frontal shoots avoided. This is because flanking fire is more effective and concealment of the guns is made easier.
- b. Guns are sited in pairs or groups of three to achieve the best fire effect.

214. *Dangerous Zone/Flat Trajectory.* When selecting fire tasks for the GPMG (SF) advantage should always be taken of the flat trajectory and the long dangerous space. An ideal task would require (see vufoil paragraph 208. b.):

- a. The line of fire to be across level ground or ground sloping gradually away from the gun.

- b. The area to be covered to be within 600 metres of the gun position.

Beyond 600 metres the Dangerous Zone will only be made up of the beaten zone plus the dangerous space. (Example: a single gun at 1000 metres — 75 metres beaten zone, + 25 metres dangerous space = 100 metres Dangerous Zone).

Defence

215. Tasks for the GPMG (SF) in defence are:

- a. DF Tasks.
- b. FPF Task.
- c. Protecting with fire the flanks, front and gaps between neighbouring platoons and companies, including those of neighbouring battalions.
- d. Harassing tasks.
- e. Supporting fire for patrols or operations forward of the FEBA.

216. In defence the procedures for the selection and recording of GPMG (SF) fire tasks are as follows:

- a. The overall fire plan is prepared and coordinated at battalion level. Tasks are allocated to the gun/group of guns best suited to carry out the task. Up to six tasks have proved the maximum for one gun.
- b. Detailed siting of guns is done at company level.
- c. Guns should be sited in defilade and grouped whenever possible in order to lay a longer and therefore more effective beaten zone.
- d. The command and control of the guns will be laid down by the Company Commander; for this purpose they should be sited within or near a platoon position for protection and communication.
- e. Tasks should be registered in daylight by firing if possible.

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217. **Defensive Fire Tasks (DF).** These will include such targets as cross roads, minefield lanes, bridges, obstacles, wire, i.e., where the enemy is likely to concentrate. Each gun can manage up to six such fire tasks.

218. **The Final Protective Fire Task (FPF).** This is the primary DF task and will be nominated as such by the Commander. Unless actually engaging another target, the guns remain laid on their FPF task so that there is a minimum of delay between receipt of the call for FPF and the guns opening fire. When laying a FPF no deviation in elevation or line is permissible.

219. **FPF Safety.** (See vufoil, paragraph 208. c.). The FPF task should be laid as close to the defended locality as is possible with safety. The safety angle will vary, depending on:

- a. The ground.
- b. Whether friendly forces are well dug in and safe from ricochets.
- c. The general battle situation.
- d. Peacetime. 200/570 mils.
- e. Wartime. Never less than 50 mils.
- f. The angle to be used will be decided by the officer commanding the guns. He must realise that the minimum angle of 50 mils allows for: (see vufoil paragraph 208. d.)
 - (1) Minor inaccuracies in aiming.
 - (2) Movement of tripod settling.
 - (3) Half the width of the BZ.
 - (4) The possibility of strong winds blowing towards the FEBA.

220. **Targets.**

a. During darkness, guns are to remain manned and detachments are to know: (see vufoil paragraph 208. e.)

- (1) The signal for the FPF task.
- (2) The rates of fire to be employed.
- (3) The system of communication when other DF tasks are to be engaged.
- (4) The targets and times of firing in a pre-planned programme of firing are to be followed. This information is to be contained in a Target Information Sheet.

b. Traversing fire can be employed during obscuration or darkness, providing the ground and target afford a reasonable chance of achieving fire effect, or if illumination makes it possible to observe and correct strike.

c. If, when the area is illuminated, fire is seen to be off the target this can be corrected by using the tripod deflection drum for direction. The dial sight elevation fine scale in conjunction with the range tables can be used for lifts and drops.

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221. **Numbering of Tasks.** DF tasks are numbered as follows: (see vufoil paragraph 208. f.)

A Coy	SF 100-199
B Coy	SF 200-299
C Coy	SF 300-399
Spare	SF 400-499
Anti Tk Pl	SF 500-599

In practice, the first number is not used, for example, the first task which is the FPF task is always 101, 201, 301 etc.

222. **Confirm by questions.**

Attack

223. Explain. The GPMG (SF) can:

a. Before the Attack:

- (1) Provide supporting fire to neutralize enemy positions.
- (2) Give flank protection.

b. During the Attack. Provide close observed supporting fire on enemy positions in front of leading assault troops. The progress of own troops must be observed for fire to be switched to fall the correct safety distance ahead of the assault. An NCO or guide will be needed with the assaulting troops to ensure rapid deployment on arrival.

c. After the Attack:

- (1) Provide Final Protective Fire (FPF) and Defensive Fire (DF) during reorganization.
- (2) Provide supporting fire for patrols.
- (3) Fire harassing fire tasks.

224. The Company Commander will lay down:

- a. Targets and Timings.
- b. Alternative tasks.
- c. Command and control.

225. The guns may be used in the light role to increase the fire power of the assaulting troops in which case provision must be made for the immediate delivery of the SF kits on reorganization. On reorganization the tasks already discussed in defence apply. Areas in which guns are sited will be provisionally selected from the map before the attack, the exact site being confirmed as soon as the position is secure.

226. **Supporting Fire Safety.**

- a. Supporting fire is most likely to be flanking fire because of the severe restrictions imposed when overhead fire is used.

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- b. When employing flanking fire the safety angle must not be less than 50 mils. Troops moving in the open will be exposed and the safety angle would normally be greater. The officer commanding the guns makes the decision on what it is to be.
- c. The angle is to be measured from the enemy position. Select a prominent feature on that line and when attacking troops reach the line from the guns through this feature the guns cease to fire or switch.
- d. The ground over which assaulting troops advance has to be visible from the gun position so that switching can be safely controlled. If this is not possible a pre-arranged signal or timed programme is to be used.

Withdrawal

227. GPMGs (SF) should carry out the tasks as previously discussed for defence until denial time. They may be last out, guns and SF kits being carried out with the assistance of other troops.

228. *Confirm by questions.*

Conclusion

229. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Confirm by questions.*
- c. *Pack kit (drops etc).*
- d. *Summary. To include the following:*
 - (1) The flexibility of the gun with a trained gun team.
 - (2) A forecast of the squad's next lesson in this subject.

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TARGET INFORMATION SHEET

No Gun

Target Numbers	Time		Elevation Scales Reading	Bearing Scales Reading	Range to Target	Remarks
	From	To				

Date..... (Sgd)..... Commanding No..... Pl..... Coy

1	2		3
Range in Metres	Approximate dimensions of BZ in metres		Lifts for 50 Metres
	Width	Length	
500- 800	1½	90	1·0 mil
850-1100	2	80	1·5 mils
1150-1450	3	60	2·0 mils
1500-1750	4	50	2·5 mils
1800	4	50	3·0 mils

Fig 18.—Target Information Sheet

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Range (metres)	Dimensions of Horizontal Beaten Zones in Metres		Lifts for 50 metres
	Width	Length	
500	1	110	1·0 mil
550	1	105	1·0 mil
600	1	100	1·0 mil
650	1	95	1·0 mil
700	1	90	1·0 mil
750	2	85	1·0 mil
800	2	85	1·0 mil
850	2	80	1·5 mils
900	2	80	1·5 mils
950	2	75	1·5 mils
1000	2	75	1·5 mils
1050	2	70	1·5 mils
1100	2	70	1·5 mils
1150	2	65	2·0 mils
1200	3	65	2·0 mils
1250	3	60	2·0 mils
1300	3	60	2·0 mils
1350	3	60	2·0 mils
1400	3	55	2·0 mils
1450	3	55	2·0 mils
1500	3	55	2·5 mils
1550	3	55	2·5 mils
1600	4	50	2·5 mils
1650	4	50	2·5 mils
1700	4	50	2·5 mils
1750	4	50	2·5 mils
1800	4	50	3·0 mils

Fig 19.—Range Tables

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LESSON 12—TARGET INFORMATION SHEET

A. INSTRUCTOR'S NOTES

230. **Aim.** *To teach the use of and method of compiling target information sheets.*
231. **Timings.** *One 20 minute period.*
232. **Method.** *A basic instructional period for gun teams best taught prior to Lesson 5—Preparation for Night Firing.*
233. **Stores:**
- | | |
|----------------------------------|----------------------|
| <i>Target Information Sheets</i> | <i>2 per soldier</i> |
| <i>Pencils</i> | <i>1 per soldier</i> |
| <i>Chalkboard</i> | <i>1</i> |
| <i>Chalk (various colours)</i> | <i>As required</i> |
234. **Preparation:**
- Prepare a Target Information Sheet on a chalkboard including:*
 - One FPF.*
 - Three point targets.*
 - One traversing target.*
 - Use H hour timings and include in the remarks column.*
 - Rapid (R) and Signal to open fire (Codeword, whistle blasts) for FPF.*
 - Ammunition required per task.*
 - Number of clicks for the traverse.*
 - Elevation adjustments in mils.*
 - Prepare a Target Information Sheet for squad practice (vide paragraph 232a).*
235. **Miscellaneous:**
- During the squad practice act as the officer appointed to co-ordinate the company fire plan and give out the following information:*
 - The company represented.*
 - Elevation and bearing scale readings for an FPF and three DF tasks and their ranges.*
 - The signal for FPF.*
 - Timings for each DF task. Nominate two timings for one of the tasks.*
 - Confirm adjustment necessary to 'add 100' for at least one task.*
 - Confirm ammunition requirement for all tasks less FPF.*

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B. CONDUCT OF THE LESSON

Preliminaries

236. *Safety Precautions.* Not applicable.

237. *Revision.* Nil.

Introduction

238. *Explain.* For night firing tasks when fire is required on more than one target it will be necessary to record all details of each task on a target information sheet retained beside the gun. The readings of each task are obtained during the daylight preparation for night firing. Target numbers, timings and special instructions are obtained from the officer co-ordinating the company SF tasks.

Target Information Sheet (see Fig 18)

239. *Explain the headings on the sheet:*

a. *Target Numbers.* The officer co-ordinating the SF tasks selects target numbers from within the company block allocation.

- | | | |
|------------|---|--------------|
| (1) A Coy | — | SF 101 – 199 |
| B Coy | — | SF 201 – 299 |
| C Coy | — | SF 301 – 399 |
| Spare | — | SF 401 – 499 |
| Anti Tk Pl | — | SF 501 – 599 |

(2) The FPF is the first of the series, 101, 201, etc.

b. *Time.* The time is entered either openly using the 24 hour clock timings throughout or screened by using H hour timings throughout. No timing is given for FPF.

c. *Elevation and Bearing Scales Reading.* Each is entered as a four figure number.

d. *Iron Sight Setting.* The sight setting is used in conjunction with a range table (see Fig 21) to determine elevation adjustments.

e. *Remarks.* This is used for all special instructions relating to the target, i.e., "On call" "FPF signal to fire" "Rapid" "Two belts over period" "Adjustment 1.5 mils" "Traversing right for four clicks" "Ammunition required".

f. *Range Table Extract.* This contains the minimum information necessary for the gun controller to effect adjustments for elevation on the dial sight.

g. The number of the gun involved is recorded and entries confirmed and signed by the officer appointed to co-ordinate the company fire plan.

240. *Confirm by practice.*

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Conclusion

241. End of Lesson Drill:

- a. Questions from the squad on the entire lesson.
- b. Confirm by questions and practice.
- c. Pack kit.
- d. Summary. To include the following:
 - (1) The importance of clear entries on the Target Information Sheet.
 - (2) A forecast of the squad's next lesson in this subject.

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CHAPTER 2

PRACTICE PERIODS

INTRODUCTION

General

242. All training must be progressive; unnecessary repetition is bad instructional practice. A soldier learns skills and facts in the basic lessons which should be taught only once during his service. He then needs plenty of practice in which to speed up his actions and get the facts firmly fixed in his mind.

243. The proposed sequence for each stage of a practice period is:

- a. REMIND—By explanation.
- b. ASSESS WEAKNESSES—By practice or test.
- c. IMPROVE ON WEAKNESSES—By practice.
- d. PROGRESSIVE PRACTICE—By competitions.

244. The practice periods in this pamphlet are intended as a guide to exercising soldiers during their training. The instructor should plan the period on an assessment of the soldier's weak points.

245. Faults should be immediately brought to the notice of the soldier and corrected, otherwise he will go on making the same mistakes.

246. It may become obvious during a practice period that the soldiers have failed to grasp a particular skill or fact. The instructor will, therefore, have to teach that part of the basic lesson again.

Competitions

247. The incentive of competition will always help to make practice more interesting. The whole of a practice period can be based on competition if the instructor so wishes. Some points on framing competitions are:

- a. They may be on an individual or on a team basis.
- b. If run on a team basis the instructor must ensure that the selected teams are all fairly equal as regards performance. The more advanced members of the team will help along the weaker members.
- c. Marks can be awarded up to a given total, or a total started with and marks deducted for mistakes as the competition progresses. It is left to the discretion of the instructor as to whether or not to use a scoring system.
- d. A chart drawn on a chalkboard or a sheet of paper on which to mark up results should always be used.

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e. Further interest can always be attained by making one team or individual watch another, criticising and awarding or deducting marks.

f. Above all the instructor must make certain that competitions are simple and realistic, i.e., that they exercise the soldiers in the facts and skills concerning their training.

Master and Pupil

248. The master and pupil method of practice in its simplest form is for one man (the pupil) to work under the supervision of another (the master); the instructor keeps an eye on both.

249. At all stages of training it stimulates interest, keenness and attention to detail. It is particularly useful with large squads and in competitions. Used regularly, it also develops initiative and leadership. Potential leaders can often be spotted by watching the masters at work.

PRACTICE 1—LESSONS 1 AND 2

A. INSTRUCTOR'S NOTES

250. *Aim.* To practise the gun team in:

- a. *Handling the tripod.*
- b. *The application of fire control orders.*
- c. *Barrel changing.*

251. *Timings.* Two 40 minute periods.

252. *Method.* An outdoor practice period.

253. *Stores:*

GPMGs	1 per two soldiers
SF kit (complete to CES)	1 per gun
Ammunition boxes	1 per gun
Drill rounds (belted)	20 per gun (minimum)
Sandbags (half filled)	3 per gun
Stopwatch	1
Chalkboard/Score sheet	1

254. *Preparation:*

- a. *Reconnoitre the training area to be used and select:*
 - (1) *An area for mounting the guns and tripods behind cover.*
 - (2) *Arcs of fire and reference points.*
 - (3) *A minimum of six point and four traversing targets and their ranges.*
- b. *Prepare a chalkboard/scoresheet for the final practice.*

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Gun Team	Mount gun and tripod		Actions on FCO		Barrel change		Total Points
	Time/Faults	Points	Faults	Points	Time/Faults	Points	

c. Check that the stopwatch is fully wound and works.

255. Miscellaneous:

- A high standard of fire control orders is necessary to ensure maximum benefit from this period.
- Ideally, practise each soldier as a gunner and a gun controller.
- Reteaching is only to be done when considered absolutely necessary.
- Mounting and dismounting drills. Use the following words of command:
 "Mount tripod . . . dismount tripod".
 "Mount gun . . . dismount gun".
 "Mount gun and tripod . . . dismount gun and tripod".
- Firing drills and orders during firing:
 - Point targets. Introduce "Stop" "Go right six clicks . . . go on" "Drop/add 100 . . . go on" into the fire control order.
 - Traversing target. Introduce "Stop . . . noted point of aim" "Stop . . . relay" into the fire control order.
- Fire positions and use of cover. Indicate the area of cover to be used for the fire positions and the arc of fire to be covered. Allow half of the squad to set up their guns and use the other half as critics. Then change round.
- Final practice. To score:
 - Add two seconds for each fault to the overall time taken.
 - Allot one point to the soldier or team coming last in a test, two points to the second last, three points to the third and so on.

B. CONDUCT OF THE LESSON

Preliminaries

256. *Safety Precautions. Normal. Indicate arcs of fire and reference points.*
257. *Revision. Nil.*

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Introduction

258. *Explain.* To be fully effective in battle the gun team must be able to handle the tripod correctly and apply fire control orders quickly. This can be achieved only after a great deal of practice.

Suggested Practices

259. *The Sustained Fire Kit.* With the kit still packed, question the squad on the contents of the holdalls.

260. *Mounting/Dismounting the Gun and Tripod on Even Ground* (see paragraph 255d).

- a. *Explain.* In the training test, a team is graded 'Skilled' if it carries out the complete drill in 70 seconds or less.
- b. *Practise the squad in mounting and dismounting the tripod. Leave the tripod mounted after the last practice.*
- c. *Question the squad on the names of tripod parts.*
- d. *Question the squad on safety during mounting and dismounting the gun.*
- e. *Practise the squad in mounting and dismounting the gun. After the last practice order "Dismount tripod".*
- f. *Practise the squad in mounting and dismounting gun and tripod.*

261. *Loading/Laying/Unloading the Gun.*

- a. *Explain.* In the training tests a gunner is graded 'Skilled' if he can load, set the sights and lay the gun on to an indicated target without making any mistakes
- b. *Question the squad on the types of target engaged by the SF gun.*
- c. *Practise the squad in loading, laying the gun and unloading. Leave guns made safe after the last practice.*

262. *Firing Drills and Orders During Firing* (see paragraph 255e).

- a. *Question the squad on the types and rates of fire employed in the SF role.*
- b. *Practise the squad in the firing drills for point targets.*
- c. *Practise the squad in the firing drills for traversing targets.*

263. *Barrel Changing.*

- a. *Explain.* In the training tests, 'Skilled' standard is 17 seconds or less.
- b. *Practise the squad.*

264. *Fire Position and Use of Cover* (see paragraph 255f).

- a. *Question the squad on points for consideration when mounting the gun and tripod behind cover.*
- b. *Practise the squad.*

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265. **Final Practice:**

- a. Conduct the practice as a competition.
- b. Explain the conditions before each practice.
- c. Practise each team in turn in mounting gun and tripod on even ground, laying the gun, engaging a traversing target including relaying and barrel changing. Use the other teams as critics.
- d. Where applicable call out the training test set timings as they are reached.
- e. Record gun team scores on the chalkboard.

Conclusion

266. **End of Lesson Drill:**

- a. Questions from the squad on the entire lesson.
- b. Normal safety precautions.
- c. Pack kit.
- d. Summary. To include the following:
 - (1) The overall standard achieved and any weak points noted.
 - (2) A forecast of the squad's next lesson in this subject.

PRACTICE 2—LESSONS 3 AND 4

A. INSTRUCTOR'S NOTES

267. **Aim.** To practise the gun team in:

- a. Applying readings with the dial sight.
- b. Firing and making adjustments when using the dial sight.

268. **Timings.** Two 40 minute periods.

269. **Method.** An outdoor practice period.

270. **Stores:**

GPMGs	1 per two soldiers
SF kit (complete to CES)	1 per gun
Ammunition boxes	1 per gun
Drill rounds (belted)	20 per gun (minimum)
Sandbags (half filled)	3 per gun
Target Information Sheets	1 per gun
Stopwatch	1
Chalkboard/Scoresheet	1
Range cards	1

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271. Preparation:

- a. Reconnoitre the training area to be used and select:
 - (1) Fire positions for the gun teams.
 - (2) Arcs of fire and reference points.
 - (3) A minimum of six point and four traversing targets and their ranges.
- b. Prepare a range card.
- c. Prepare a chalkboard/scoresheet for the final practice.

Gun Team	Taking readings		Applying readings		Total Points
	Time	Points	Time	Points	

- d. Check that the stopwatch is fully wound and works.

272. Miscellaneous:

- a. Move the scale ring off the upper index on each dial sight before beginning the period and at times during the period provided that the squad can not observe it being done.
- b. Introduce barrel changing at least once during the period.
- c. Change gun team duties frequently.
- d. Taking and applying readings.
 - (1) Use the commands "Mark . . . record" for taking readings and "Gunner . . . Elevation . . . Direction . . . Lay" for applying readings.
 - (2) Use the readings recorded during "Taking readings" to practise "Applying readings".
- e. Firing drill and orders during firing. Introduce "Drop/add . . . mils" and "Re-record" during the practice.
- f. Final practice. To score:
 - (1) Record the time taken by each team to take and to apply readings for each target.
 - (2) Allot one point to the team coming last in a test, two points to the second last, three points to the third and so on. Award nil points if there is any error in the readings or if the elevation bubble is not central.

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B. CONDUCT OF THE LESSON

Preliminaries

273. *Safety Precautions. Normal. Issue target information sheets. Indicate arcs of fire and reference points. Order "Mount gun and tripod".*

274. *Revision. Nil.*

Introduction

275. *Explain.* The ability to provide effective fire in darkness and daylight obscured shoots during the attack and in defence is determined to a great extent by the gun team's ability to use the dial sight correctly.

Suggested Practices

276. *Taking and Applying Readings (see paragraph 272d).*

- a. *Explain.* In the training tests the gun team is graded 'skilled' if it records and applies a dial sight reading without making any errors.
- b. *Practise the squad in taking readings.*
- c. *Practise the squad in applying readings.*

277. *Firing Drill and Orders During Firing (see paragraph 272e).*

- a. *Practise the squad in the firing drills for point targets.*
- b. *Practise the squad in the firing drills for traversing targets.*

278. *Final Practice (see paragraph 272f).*

- a. *Conduct the practice as a competition.*
- b. *Explain the conditions before each practice.*
- c. *Practise each team in turn in taking and applying at least three readings.*
- d. *Record gun team scores on the chalkboard/scoresheet.*

Conclusion

279. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Normal safety precautions.*
- c. *Pack kit.*
- d. *Summary. To include the following:*
 - (1) The overall standard achieved and any weak points noted.
 - (2) A forecast of the squad's next lesson in this subject.

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PRACTICE 3—LESSONS 5 AND 6

A. INSTRUCTOR'S NOTES

280. **Aim.** To practise the gun team in:
- The preparation of night firing tasks.
 - The preparation of a gun position for later occupation.
281. **Timings.** Two 40 minute periods.
282. **Method.** An outdoor practice period.
283. **Stores:**
- | | |
|---------------------------|----------------------|
| GPMGs | 1 per two soldiers |
| SF kit (complete to CES) | 1 per gun |
| Ammunition boxes | 1 per gun |
| Drill rounds (belted) | 20 per gun (minimum) |
| Target Information Sheets | 1 per gun |
| Sandbags (half filled) | 3 per gun |
| Stopwatch | 1 |
284. **Preparation:**
- Reconnoitre the training area to be used and select:
 - Fire positions for the gun teams' night tasks.
 - Arcs of fire and reference points.
 - A minimum of two FEBAs, two point and one traversing target and their ranges.
 - Fire positions for the gun teams' daylight task.
 - Prepare a chalkboard/scoresheet for the final practice.

Gun Team	FPF		DF Tasks		Total Points
	Time	Points	Time	Points	

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- c. *Check that the stopwatch is fully wound and works.*

285. Miscellaneous:

- a. *Move the scale ring off the upper index on each dial sight before beginning the period and at times during the period provided that the squad can not observe it being done.*
- b. *Suggested Practice. No attempt should be made in the time available to occupy fire positions in the second location.*
- c. *Final Practice. To score:*
- (1) *Add two seconds for each fault to the overall time taken.*
 - (2) *Award nil points if any error in the FPF brings the line of fire inside the minimum safety angle from the FEBA.*

B. CONDUCT OF THE LESSON

Preliminaries

286. *Safety Precautions. Normal. Issue target information sheets. Indicate arcs of fire and reference points. Order "Mount gun and tripod".*

287. Revision. Nil.

Introduction

288. *Explain. The preparation of the DF and FPF tasks for engagement at night is a gun team skill which required a great deal of practice.*

Suggested Practices

289.

- a. *Question the squad on the meaning of the FPF task.*
- b. *Practise the squad in recording the FPF task.*
- c. *Practise the squad in recording other DF tasks.*
- d. *Order the squad to prepare for later occupation and carry out a token move to the new location (see paragraph 285b.).*
- e. *At the new location question the squad on the rules for firing an FPF.*
- g. *Order the squad to reoccupy the prepared position. Leave the guns in position for the final practice.*

Final Practice

290.

- a. *Conduct the practice as a competition.*
- b. *Explain the conditions before each practice.*
- c. *Practise each team in preparing four DF tasks, one of which is to be the FPF.*
- d. *Record gun team scores on the chalkboard/scoresheet.*

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Conclusion

291. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Normal safety precautions.*
- c. *Pack kit.*
- d. *Summary. To include the following:*
 - (1) The overall standard achieved and any weak points noted.
 - (2) A forecast of the squad's next lesson in this subject.

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CHAPTER 3

LIVE FIRING

INTRODUCTION

General

292. These live firing lessons are designed to confirm and assess:

- a. The basic skills of the gun team in target engagement by day and by night.
- b. The ability of gun controllers in fire control.

293 to 299. *Reserved.*

LIVE FIRING 1.—ZEROING—100 METRES

A. INSTRUCTOR'S NOTES

300. *Aim.* To superimpose the MPI of each (SF) barrel on to the Correct Zero Position (CZP).

301. *Stores:*

Normal range stores

GPMGs

SF kits (complete to CES)

Spare parts wallet (complete)

Cleaning materials (flannelette, oil, cleaning rags)

Filled sandbags

Targets (see paragraph 303. c.)

Two Fig 11 placed side by side on a 1.220 m (4 foot) square screen, each target having a 100 mm (4 inch)

by 75 mm (3 inch) white patch

Ammunition, 7.62 mm linked ball

Ear defenders

First aid kit (complete)

1 per gun team

1 per gun

1 per gun

As required

3 per tripod

2 per firer

90 rounds per gun

1 pair per soldier

1

302. *Preparation:*

a. Read Range Orders.

b. Prepare guns for firing and check that the gas regulator for each gun is set correctly for the pre-determined balance.

c. Check that the hinge clip and Allen screws are tight on the foresight of each barrel.

d. Check each soldier for ear defenders.

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303. Miscellaneous:

- a. All range staff are to be fully conversant with the information contained in *Infantry Training Volume II, Skill at Arms (Personal Weapons)*. Pamphlet No. 8 Part 1. *The General Purpose Machine Gun (Light Role)* 1975. Army Code No 71026. Chapter 4, Section 1.—Zeroing.
- b. The correct zero position (CZP) is 75 mm (3 inches) above the point of aim.
- c. On an ETR a 3.048 m by 1.220 m (10 foot by 4 foot) screen may be used.
- d. It is important that the trigger is operated correctly (see Lesson 2, paragraph 58), so as not to influence the movement of the gun during firing.

B. CONDUCT OF THE LESSON

Preliminaries

304. *Safety Precautions.* Normal as applicable to the range being used.

Practice Details

305. The gun is to be mounted on the tripod for each practice.

306. Practices as detailed are to be fired in full for each of the three barrels used in the sustained fire role.

Practice	Range	Rounds	Targets	Instructions
(a)	(b)	(c)	(d)	(e)
1. Drying the barrel	100m	5	Stop butt.	1. Fire one burst.
2. Grouping Zeroing	100m	Four 5 round belts	Two screens as described in the stores list.	1. Fire one five round burst at each target. 2. Calculate the average MPI of the four groups. 3. Adjust the foresight as necessary.
3. Check Zero	100m	5	As for practice 2.	1. Fire one five round burst at one target only. 2. Check the MPI for correct zero (see paragraph 307).

Standards

307. *Explain.* The barrel is correctly zeroed if the distance from the MPI to the CZP is within 25% of the size of the check group fired.

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Conclusion

308. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.***
- b. *Normal safety precautions.***
- c. *Pack kit.***
- d. *Summary. To include the following:***
 - (1) *The importance of correct zeroing.***
 - (2) *A forecast of the squad's next lesson in this subject.***

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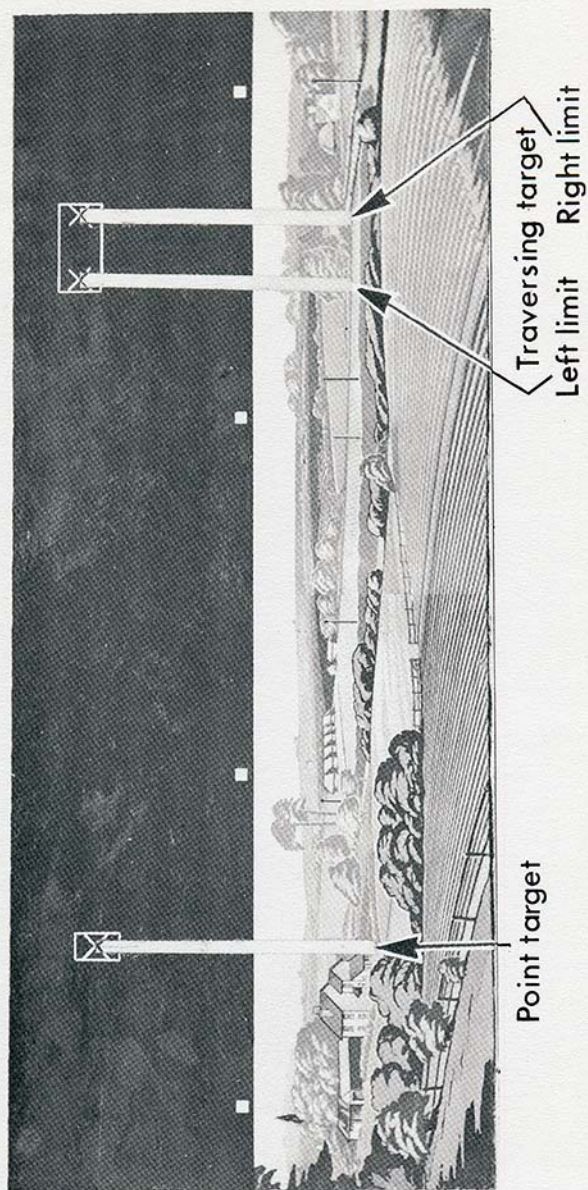


Fig. 20.—Harmonization screen, measuring rod and scoring.

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LIVE FIRING 2—INTRODUCTORY SHOOT AND THE ENGAGEMENT OF POINT AND TRAVERSING TARGETS (HARMONIZATION SHOOT)— 25 METRES

A. INSTRUCTOR'S NOTES

309. *Aim:*

- a. *To confirm that the gunner can engage point and traversing targets.*
- b. *To practise NCOs in fire control.*

310. *Stores:*

Normal range stores

GPMGs

1 per gun team

SF kits (complete to CES)

1 per gun

Spare parts wallet (complete)

1 per gun

Cleaning materials (flannelette, oil, cleaning rags)

As required

Filled sandbags

3 per tripod

Targets:

Harmonization screen

1 per tripod

Landscape target (miniature replica)

1 per tripod if

applicable (see

paragraph 312. c.)

Ammunition, 7.62 mm linked ball

100 rounds per firer

Ear defenders

1 pair per soldier

First aid kit (complete)

1

Ruler

1 per tripod

680 mm (27 inch) measuring rod

1 per tripod

311. *Preparation:*

- a. *Read Range Orders with particular reference to the positioning of harmonization screens. Incorrect positioning can create a safety hazard.*

b. Prepare guns for firing and check that the gas regulator for each barrel is set correctly for the pre-determined balance.

- c. *Check each soldier for ear defenders.*

- d. *Select a minimum of two point and two traversing targets on the landscape.*

312. *Miscellaneous:*

- a. *It is important that guns have been correctly zeroed before firing this practice.*
- b. *The harmonization range setting for each gun is to be ordered as the range for all FCOs.*
- c. *NCOs can be exercised in fire control during this period. The instructor points out the target on the replica to the NCO. The NCO gives the FCO to the gun team. Any criticism of the NCOs' FCO should be done out of hearing distance of the gun team.*

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B. CONDUCT OF THE LESSON

Preliminaries

313. *Safety Precautions. Normal as applicable to the range being used.*

Practice Details

314. *Bursts of five rounds are to be used in order to conserve ammunition.*

315. *Scores in the repeat shoot only of Practices 2 and 3 are to count.*

316. Details of the practices are as follows:

Practice	Range	Rounds	Target	Instructions
(a)	(b)	(c)	(d)	(e)
1. Introductory Shoot & Harmonization of Sights	25m	20	Harmonization Screen (see Fig 20)	<ol style="list-style-type: none"> 1. Give each gun a FCO (range 1400) on to one of the aiming marks just above the landscape. 2. Order "Stop" after the first burst. 3. Order elevation adjustments to position the MPI between the harmonization lines. Record each gun's sight setting. 4. Discuss gun drills.
2. Point Target	25m	30	As for Practice 1.	<ol style="list-style-type: none"> 1. Gun loaded with 15 rounds. 2. Give a FCO on to a point target (see paragraph 312. b.). 3. Order "Stop" after the third burst. 4. Order "Unload—clear gun" discuss gun drills and take scores. 5. Repeat the practice.
3. Traversing Target	25m	50	As for Practice 1.	<ol style="list-style-type: none"> 1. Gun loaded with 25 rounds. 2. Give a FCO on to a traversing target of approximately 8-10 mils in width (see paragraph 312. b.). 3. Order "Unload—clear gun". 4. Repeat the practice.

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Scoring (see Fig. 20).

317. A measuring rod 680 mm (27 inches in length is required and is used as follows:

a. Point Target.

- (1) Hold the rod vertically with the bottom centre placed on the point of aim.
- (2) Mark the screen at the top centre of the rod; this indicates where the MPI should be.
- (3) Draw a rectangle 50 mm (2 inches) wide and 100 mm (4 inches) deep, with the mark just made as its centre.
- (4) Count one point for each shot within or cutting the rectangle.

b. Traversing Target.

- (1) Mark the limits of the target as for a point target.
- (2) Join the two marks with a pencil line, extending it by 25 mm (1 inch) at each end.
- (3) Draw lines 50 mm (2 inches) above and 50 mm (2 inches) below the first line. Joint the ends by vertical lines.
- (4) Count one point for each shot within or cutting the rectangle.

Standards

318. *Acceptable Standard* . . . 28 points in the repeat shoot of Practices 2 and 3.

Conclusion

319. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Normal safety precautions.*
- c. *Pack kit*
- d. *Summary. To include the following:*
 - (1) Standards achieved and any weak points noted
 - (2) A forecast of the squad's next lesson in this subject.

LIVE FIRING 3—OBSERVATION OF FIRE AND ADJUSTMENT (FIELD FIRING)

A. INSTRUCTOR'S NOTES

320. *Aim.* To confirm the gun controller's ability to observe and adjust fire on to the target.

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LIVE FIRING 4—DIAL SIGHT FIRING DRILLS AND PREPARATION FOR NIGHT FIRING (HARMONIZATION SHOOT)—25 METRES

A. INSTRUCTOR'S NOTES

329. *Aim.* To confirm that the gun team can use the dial sight correctly during target engagement and can prepare and engage tasks at night.

330. *Stores:*

Normal range stores

GPMGs

1 per gun team

SF kits (complete to CES)

1 per gun

Spare parts wallet (complete)

1 per gun

Target Information Sheets

1 per gun

Cleaning materials (flannelette, oil, rags)

As required

Filled sandbags

3 per tripod

Targets:

Harmonization screen

1 per tripod

Landscape target (miniature replica)

*1 per tripod if applicable
(see paragraph 332.
e.)*

Ammunition 7.62 mm linked ball

140 rounds per gun

Ear defenders

1 pair per soldier

Binoculars

1 per tripod

First aid kit (complete)

1

680 mm (27 inches) measuring rod

1 per tripod

Torches (red filter)

1 per tripod

Chalk (various colours)

As required

331. *Preparation:*

a. Read Range Orders with particular reference to the positioning of harmonization screens. Incorrect positioning can create a safety hazard.

b. Prepare guns for firing and check that the gas regulator for each barrel is set correctly for the pre-determined balance.

c. Select a minimum of three point and three traversing targets on the landscape (one of the point targets to be the FPF).

d. Check each soldier for ear defenders.

332. *Miscellaneous:*

a. It is important that guns have been correctly zeroed before firing this practice.

b. The harmonization range setting for each gun is to be ordered as the range in all FCOs.

c. Outline the scoring area with chalk if the repeat shoot is being done at night.

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B. CONDUCT OF THE LESSON

Preliminaries

324. *Safety Precautions.* Normal as applicable to the range being used. Issue blank range cards.

Practice Details

325. Use a target indicator to indicate targets to the gun controller. Allow sufficient time for the gun controller to make out the range card.

326. The gun controller should be in the gun position for Practices 1 and 2 and in the displaced OP for Practice 3.

327. Practice details are as follows:

Practice	Approx Range	Rounds	Instructions
(a)	(b)	(c)	(d)
1. Point Target	900m & 1000m	80	1. Indicate a point target to the gun controller; tell him to engage it and to stop firing when the first effective burst falls on it. 2. Discuss the FCOs and adjustments (see paragraph 323. d.). 3. Repeat the practice against a different target at a different range.
2. Traversing Target	800m	140	1. Indicate a traversing target approximately 10 mils wide to the gun controller. 2. Tell him to engage the target and to stop firing and relay when the target is successfully engaged. 3. Discuss the FCO and adjustments.
3. Displaced OP (see paragraph 323. c.)	900m & 1000m	80	As for Practice 1.

Conclusion

328. *End of Lesson Drill:*

- Questions from the squad on the entire lesson.
- Normal safety precautions.
- Pack kit.
- Summary. To include the following:
 - Overall standard achieved and any weak points noted.
 - A forecast of the squad's next lesson in this subject.

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(a)	(b)	(c)	(d)	(e)
				4. As the gunner aligns the dial sight, lower the iron backsight. 5. When the gunner reports "On" order "Go On". 6. Order "Stop" after two bursts. 7. Order "Unload—clear gun", discuss gun drills and take scores. 8. Repeat the practice.
3. Preparation and engagement of night tasks	25m	100	As for Practice 1.	1. Gun loaded with 50 rounds. 2. Register by firing and record the readings of four DF tasks, one of which is to be the FPF, on a target information sheet. 3. When all night preparations are complete and the gun is aligned on the FPF order "Unload... clear gun". 4. Discuss gun drills, take scores and patch out without destroying the lines of the scoring areas (see paragraph 332. c.). 5. Reload with 50 rounds. 6. Using the recorded readings, engage each target with one burst (see paragraph 332.d.). 7. On completion, order "Unload—clear gun" discuss gun drills and take scores.

Scoring (see Fig 20.).

338. A measuring rod 630 mm (27 inches) in length is required and is used as follows:

a. Point Target.

(1) Hold the rod vertically with the bottom centre placed on the point of aim.

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d. During the engagement of night tasks, allow the gun team sufficient time to relay on to the FPF between tasks.

e. NCOs can be exercised in fire control during this period. The instructor points out the target on the replica to the NCO. The NCO gives the FCO to the gun team. Any criticism of the NCO's FCO should be done out of hearing distance of the gun team.

B. CONDUCT OF THE LESSON

Preliminaries

333. *Safety Precautions. Normal as applicable to the range being used.*

Practice Details

334. *Bursts of five rounds are to be used to conserve ammunition.*

335. *Scores in the repeat shoot only of Practices 2 and 3 are to count.*

336. *The repeat shoot of Practice 3 may be done during the hours of darkness.*

337. Details of the practices are as follows:

Practice	Range	Rounds	Target	Instructions
(a)	(b)	(c)	(d)	(e)
1. Harmonization of Sights	25m	10	Harmonization Screen (see Fig 20)	<ol style="list-style-type: none">1. Give each gun a FCO (range 1400) on to one of the aiming marks just above the landscape.2. Order "Stop" after the first burst.3. Order elevation adjustments to position the MPI between the harmonization lines.4. Record each gun's sight setting.
2. Dial Sight. Obscuration of Target	25m	30	As for Practice 1.	<ol style="list-style-type: none">1. Gun loaded with 15 rounds.2. Give a FCO on to a point target (see paragraph 332. b.).3. Order "Stop" . . . mark" after the first burst.

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<i>Ammunition 7.62 mm mixed linked (see paragraph 343. a.)</i>	<i>300 rounds per firer</i>
<i>Ear defenders</i>	<i>1 pair per soldier</i>
<i>Binoculars</i>	<i>1 per gun team</i>
<i>Target Indicator (Pointer staff)</i>	<i>1</i>
<i>Range Card</i>	<i>1 per gun team</i>
<i>Torches (red filter)</i>	<i>1 per gun team</i>
<i>First aid kit (complete)</i>	<i>1</i>

343. Preparation:

- Read Range Orders with particular reference to any limitations on the use of tracer.*
- Reconnoitre the training area and determine:*
 - Gun positions and arcs of fire. If there are no prepared gun pits ensure that hasty defence positions selected are tactically realistic.*
 - The location of the FEBA (500-600 m).*
- Prepare a range card with pre-determined ranges to a minimum of four point targets (800-1000 m) and one traversing target.*
- Prepare guns for fixing and check that the gas regulator for each barrel is set correctly for the pre-determined balance.*
- Check each soldier for ear defenders.*

344. Miscellaneous:

- It is important that barrels are changed after every 400 rounds fired.*
- Move the scale ring slightly off the upper index on each dial sight before beginning the period and at times during the period provided that the gun team can not observe it being done.*
- The length of burst may be reduced to conserve ammunition.*

B. CONDUCT OF THE LESSON

Preliminaries

345. *Safety Precautions. Normal as applicable to the range being used. Issue blank range cards and target information sheets.*

Practice Details

346. *Indicate each target to the gun controller with a target indicator. Allow sufficient time for the gun controller to make out the range card.*

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- (2) Mark the screen at the top centre of the rod; this indicates where the MPI should be.
 - (3) Draw a rectangle 50 mm (2 inches) wide and 100 mm (4 inches) deep, with the mark just made as its centre.
 - (4) Count one point for each shot within or cutting the rectangle.
- b. *Traversing Target.*
- (1) Mark the limits of the target as for a point target.
 - (2) Join the two marks with a pencil line, extending it by 25 mm (1 inch) at each end.
 - (3) Draw lines 50 mm (2 inches) above and 50 mm (2 inches) below the first line. Join the ends by vertical lines.
 - (4) Count one point for each shot within or cutting the rectangle.

Standards

339. *Acceptable Standard* . . . 45 points in the repeat shoot of Practices 2 and 3.

Conclusion

340. *End of Lesson Drill:*

- a. *Questions from the squad on the entire lesson.*
- b. *Normal safety precautions.*
- c. *Pack kit.*
- d. *Summary. To include the following:*
 - (1) Standards achieved and any weak points noted.
 - (2) A forecast of the squad's next lesson in this subject.

LIVE FIRING 5—FIRE CONTROL (FIELD FIRING)

A. INSTRUCTOR'S NOTES

341. *Aim. To confirm the NCOs ability to give fire control orders and to practise the gun team in their gun drills.*

342. *Stores:*

Normal range stores

GPMGs

SF kits (complete to CES)

Spare parts wallet (complete)

Target Information Sheets

Cleaning materials (flannelette, oil, rags)

Filled Sandbags

1 per gun team

1 per gun

1 per gun

1 per gun

As required

3 per tripod

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c. Pack kit.

d. Summary. To include the following:

- (1) Standards achieved and any weak points noted.
- (2) A forecast of the squad's next lesson in this subject.

Practice	(a)	(b)	(c)	(d)
1. Point Target	100m	40	1. Indicate the target to the gun controller. Inform him that the target is to be recorded as Target 1 on successful engagement. 2. Discuss the PCO and gun drills.	
2. Traversing Target	100m	50	1. Indicate a target of approx 8 m in width to the gun controller. Tell him to engage the target and relay and record it as Target 2 on successful engagement. 2. Discuss the PCO and gun drills.	
3. Observation (Point Target)	100m	40	1. Indicate the target to the gun controller. 2. When the target is being successfully engaged, order "over" to be announced by words. 3. Discuss the PCO and gun drills.	
4. Rapid Engagement	100m & 300m	50	1. Indicate two targets to the gun controller. Inform him that on successful engagement of the first target he is to immediately engage the second target. 2. Discuss the PCO and gun drills.	
5. Fire Night Firing		60	1. Indicate the FEA to the gun controller and inform him that the FEA is to be a fire at the front of it. Order him to engage and record the FEA as Target 1. 2. Discuss the preparation drill and gun drills. 3. Order the gun controller to engage each of the targets on the target information sheet in turn.	

Note: Instruction 2 of Practice 5 may be conducted in turn.

Continued

3-18 and 3-19

a. Questions from the squad on the entire lesson.

b. Normal safety precautions.

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347. Details of the practices are as follows:

Practice	Range	Rounds	Instructions
(a)	(b)	(c)	(d)
1. Point Target	900m	40	1. Indicate the target to the gun controller. Inform him that the target is to be recorded as Target 2 on successful engagement. 2. Discuss the FCO and gun drills.
2. Traversing Target	1000m	80	1. Indicate a target of approx 8 mils in width to the gun controller. Tell him to engage the target and relay and record it as Target 3 on successful engagement. 2. Discuss the FCO and gun drills.
3. Obscuration (Point Target)	1000m	40	1. Indicate the target to the gun controller. 2. When the target is being successfully engaged order " <i>Target becoming obscured by smoke</i> ". 3. Discuss the FCO and gun drills.
4. Rapid Engagement	1000m & 800m	80	1. Indicate two targets to the gun controller. Inform him that on successful engagement of the first target he is to immediately engage the second target. 2. Discuss the FCO and gun drills.
5. FPF Night Firing		60	1. Indicate the FEBA to the gun controller and inform him that the FPF is to be a line of fire in front of it. Order him to register and record the FPF as Target 1. 2. Discuss the preparation drill and gun drills. 3. Order the gun controller to engage each of the targets on the target information sheet in turn.

Note: Instruction 3 of Practice 5 may be conducted at night.

Conclusion

348. **End of Lesson Drill:**

- a. Questions from the squad on the entire lesson
- b. Normal safety precautions.

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CHAPTER 4

INFORMATION FOR THE INSTRUCTOR

SECTION 1—TRAINING TESTS

Purpose

349. The purpose of these training tests is to assess the standard of handling with the GPMG (SF) within units.

Testing

350. Standards should be assessed annually in all units.

351. Results achieved are to be recorded on individual record cards.

Conduct

352. The tests are to be done consecutively. They may be conducted:

- a. In barracks using drill or blank ammunition.
- b. On a range using live or blank ammunition.

353. The attention of the officer, WO or NCO in charge of the tests is to be drawn to *Infantry Training, Volume III, Ranges and Courses, Pamphlet No 31, Range Conduct and Safety Rules (All Arms), Army Code No. 70495. Section 9, Paragraph 51, a. (as amended by amendment No. 3., Sep/72) and Section 13, Paragraph 83.*

354. Before the test, explain fully the test conditions to the soldiers and encourage questions from them. Once the tests commence, no further help is to be given. After the test inform them of the results achieved and where they went wrong.

Dress

355. Combat Equipment Fighting Order (CEFO) less steel helmet.

Definition of Standards

356.

- a. SKILLED : Skilled standard in all tests.
- b. AVERAGE : Minimum of average in one or more tests.
- c. FAIL : Fail in one or more tests.

Details of The Tests

357. Full details of the tests are to be found at Annex A. to this section.

TRAINING TESTS—GPMG (SUSTAINED FIRE ROLE)

Test No.	Subject	Stores	Conditions	Marking
(a)	(b)	(c)	(d)	(e)
1.	Mounting the gun and tripod	GPMG. SF kit (complete to CES). Ammunition box containing a belt of 20 drill rounds. Stopwatch.	(1) Gun controller and gunner to be standing beside stores which are laid out not more than five metres from where the gun is to be mounted. (2) The gun to be mounted in the low mount position on level ground. Gunner and gun controller may assist each other in their respective tasks. (3) Time taken from the command " <i>Mount gun and tripod</i> " until both the gunner and gun controller are in the loading position.	80 seconds or less : SKILLED 81 to 90 seconds : AVERAGE Over 90 seconds : FAIL Two seconds is to be added to the overall time for each error of drill.
2.	Loading, Sightsetting and Aiming	As for Test No 1 plus: Landscape targets (if outdoors, selected natural targets).	(1) Gun mounted, gunner and gun controller in position behind gun. (2) Order " <i>Load</i> " then indicate a target. (3) No time limit. Aim is to be checked for accuracy.	All drills correct : SKILLED Up to two errors : AVERAGE Over two errors : FAIL
3.	Preparation for night firing. a.	As for Test No 2 plus: Target Information sheet. Stopwatch.	(1) Gun mounted, gunner and gun controller in position behind gun. (2) Indicate a target. Order " <i>Mark . . . record</i> ". (3) No time limit. Check that aims on both iron and dial sights are correct, and that the dial sight readings are correctly recorded and the elevation bubble is central.	All drills correct : SKILLED Up to two errors : AVERAGE Over two errors : FAIL
	Preparation for night firing. b.		(1) Alter the dial sight readings, unlock the gun and move it off aim. Using the recorded readings, order " <i>Gunner, Elevation . . . Direction . . . Lay</i> ".	All drills correct in: 60 seconds or less : SKILLED 61 to 90 seconds : AVERAGE Over 90 seconds : FAIL
4.	Changing barrels	As for Test No 3 plus: One single belted drill round.	(1) Gun mounted, loaded with one round only. Target indicated and rapid fire ordered. (2) Order " <i>Belt expended</i> ". (3) Time taken from that order until the barrel is changed and the gun is firing again.	17 seconds or less : SKILLED 18 to 20 seconds : AVERAGE Over 20 seconds : FAIL Two seconds is to be added to the overall time for each error of drill.
5.	Dismount gun and tripod	As for Test No. 1	(1) Gun mounted and loaded. (2) Order " <i>Dismount gun and tripod.</i> " (3) Time taken from that order until all the kit is packed and the gun team is standing beside it.	75 seconds or less : SKILLED 76 to 95 seconds : AVERAGE Over 95 seconds : FAIL Two seconds is to be added to the overall time for each error of drill.

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ANNEX 1 TO
SECTION 1

RESTRICTED

1. If, on active service, it is necessary to destroy GPMGs and associated equipments to prevent them being used by the enemy the following actions will prove effective:
 - a. Plug the barrel near the chamber, or bury the muzzle in the ground; load and fire, by using string tied to the trigger, from behind cover.
 - b. Strip the weapon as far as possible; bury the parts or scatter over as wide an area as possible.
 - c. Retain essential parts of mechanism, such as usable firing pins, etc.
 - d. All spare parts and equipment should be disposed of.
2. Should the foregoing destruction drills not be possible, other methods must be devised, e.g., destroying by explosive charges or by fire; running over by vehicles; scattering components in rivers or undergrowth.
3. Unfired ammunition can be destroyed by explosives using improvised demolition charges made up with grenades, bombs, etc.

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